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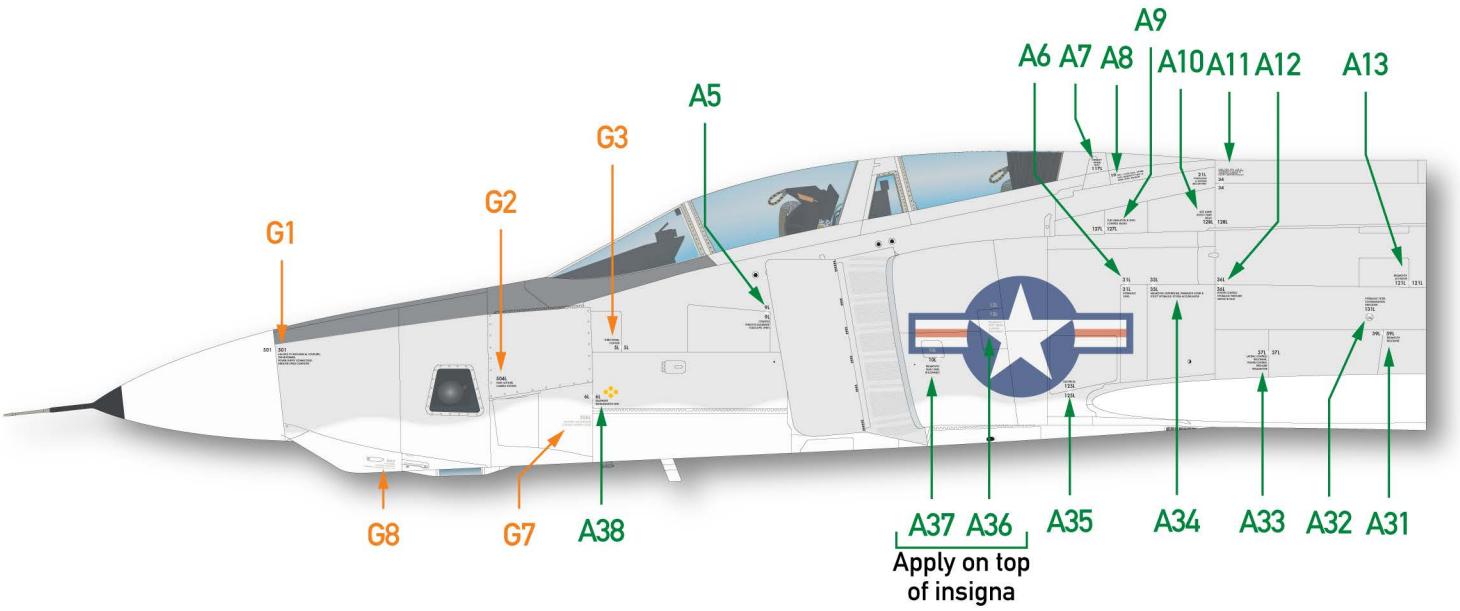
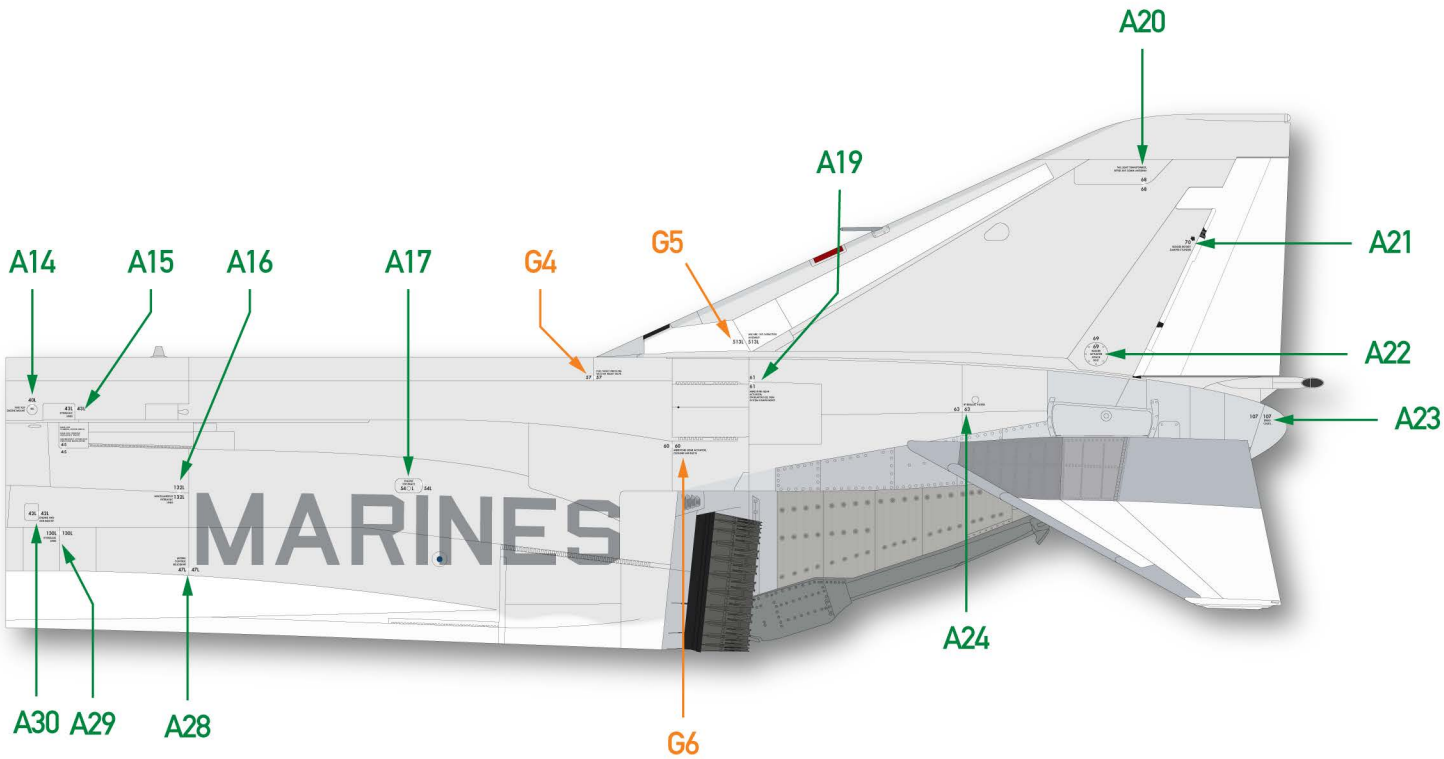
McDonnell RF-4B
Access Door Markings
Left Hand Fuselage





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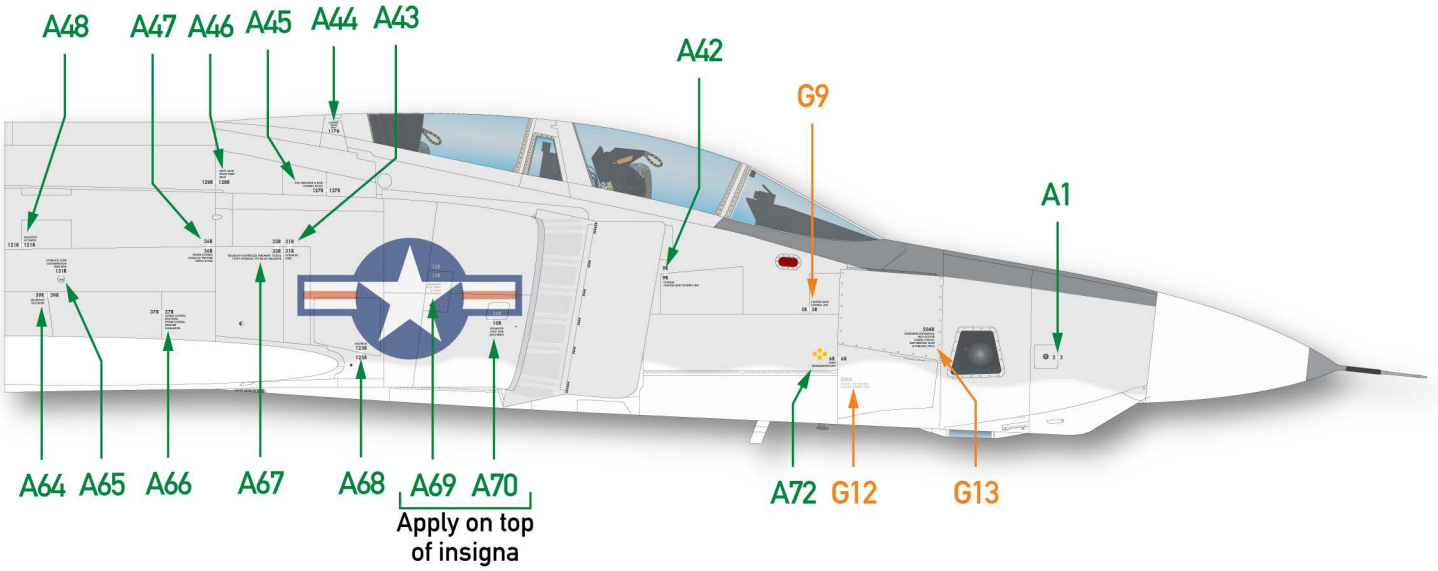
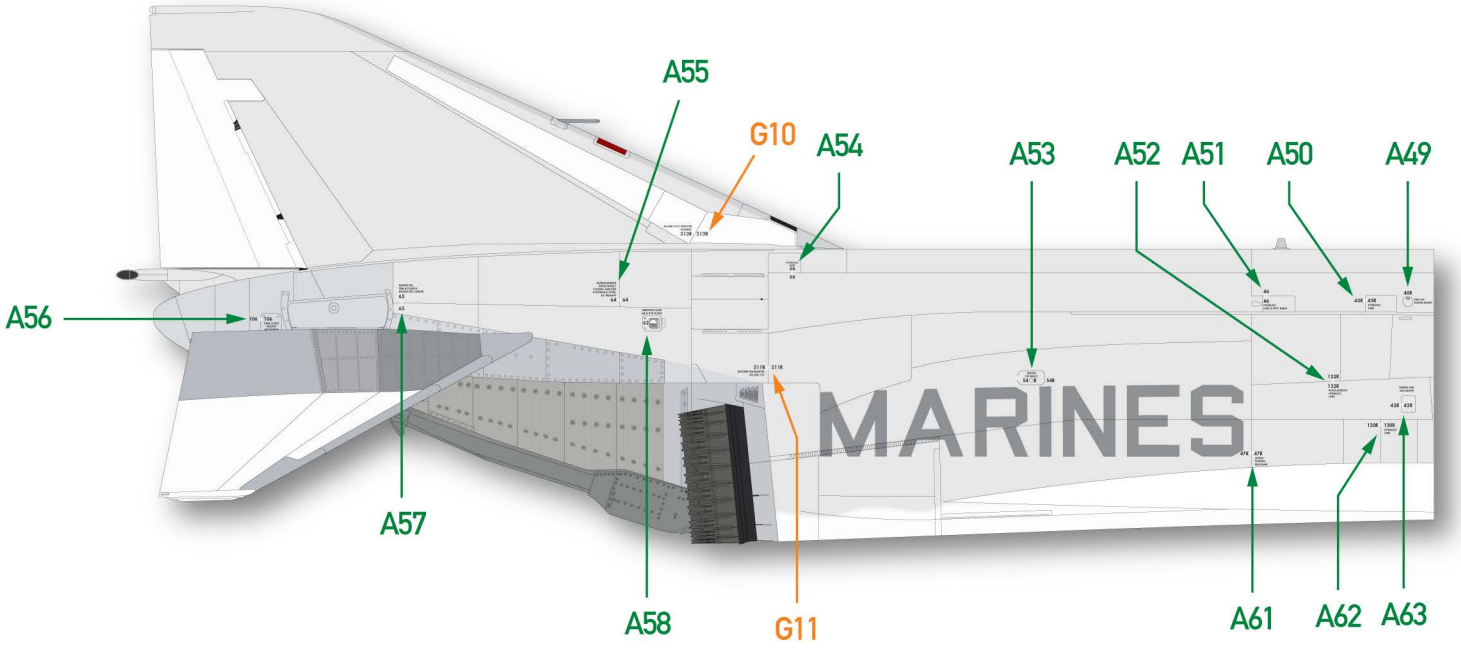
McDonnell RF-4B
Access Door Markings
Right Hand Fuselage





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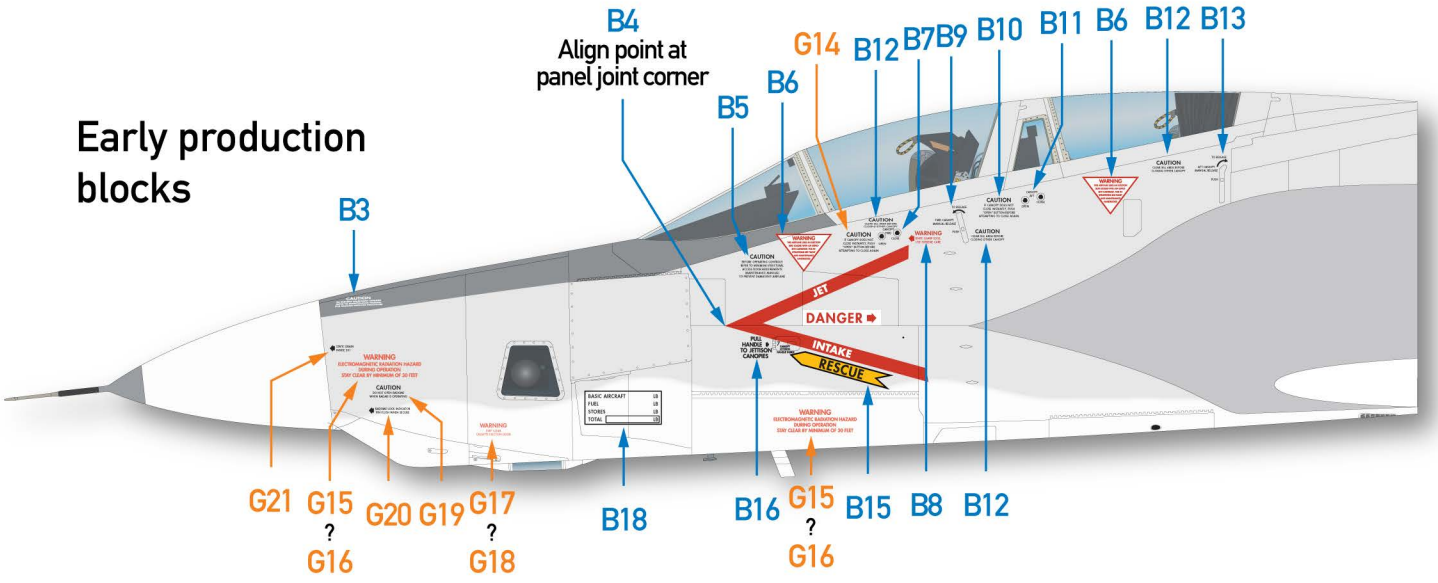
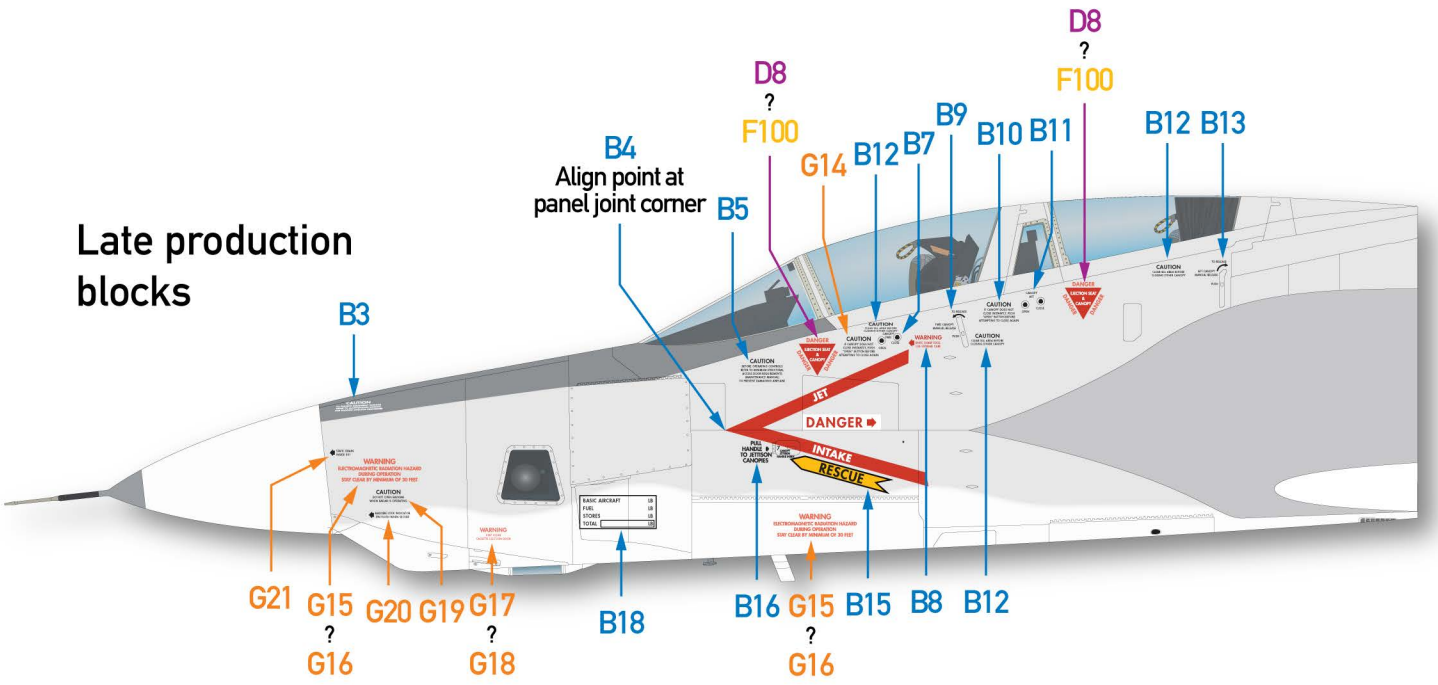
McDonnell RF-4B
Instructional Markings
Left Hand Forward Fuselage

Early production blocks



Late production blocks



Notes:

G15/G16/G17/G18: The salmon colored stencils (G15/G17) were most commonly used, but the bright red versions (C10/G18) were also applied on some aircraft.

D8/F100: The white-on-red (USAF style) ejection warning triangle was introduced in January 1966 from Block 25 onwards (BuNo 153095). Older aircraft retained the earlier style until depot overhaul.

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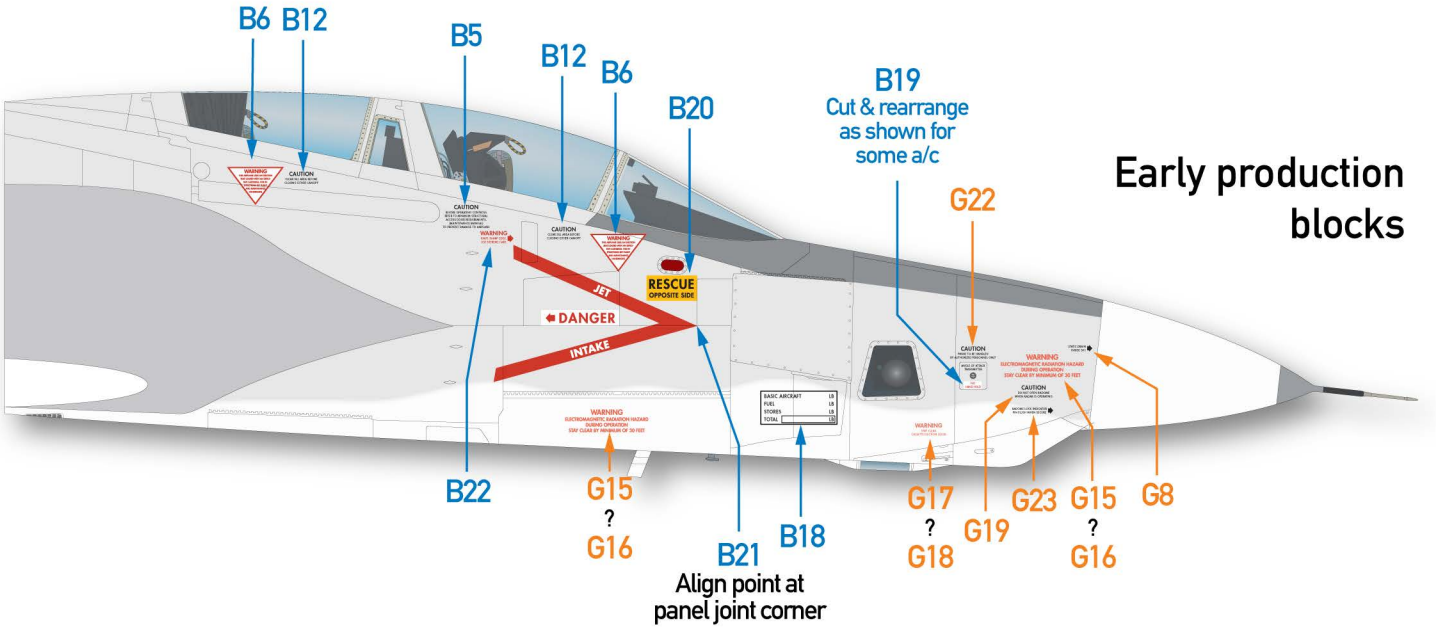
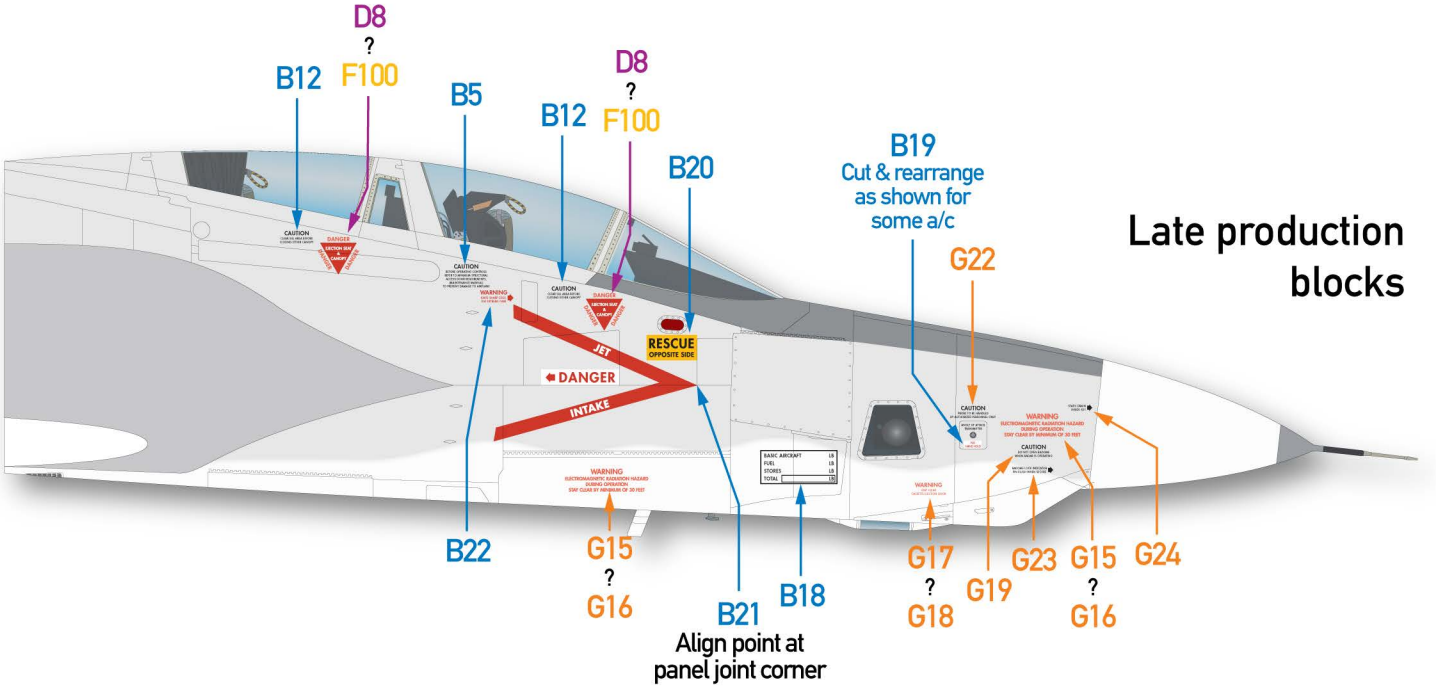
McDonnell RF-4B
Instructional Markings
Right Hand Forward Fuselage





Notes:

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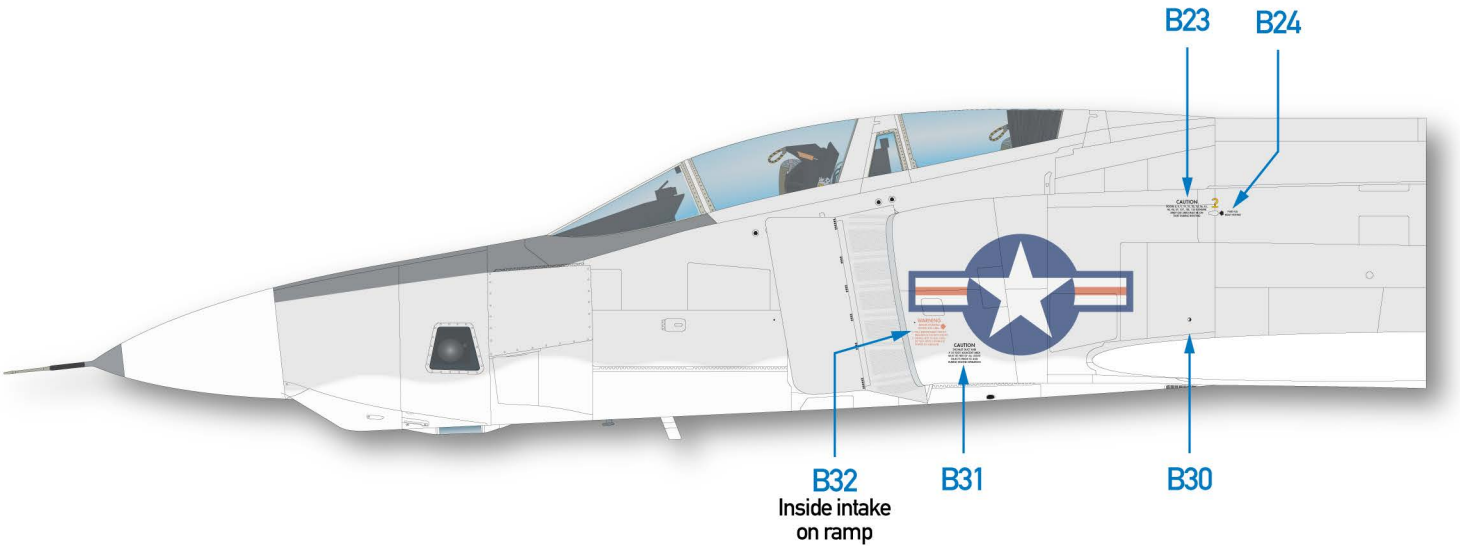
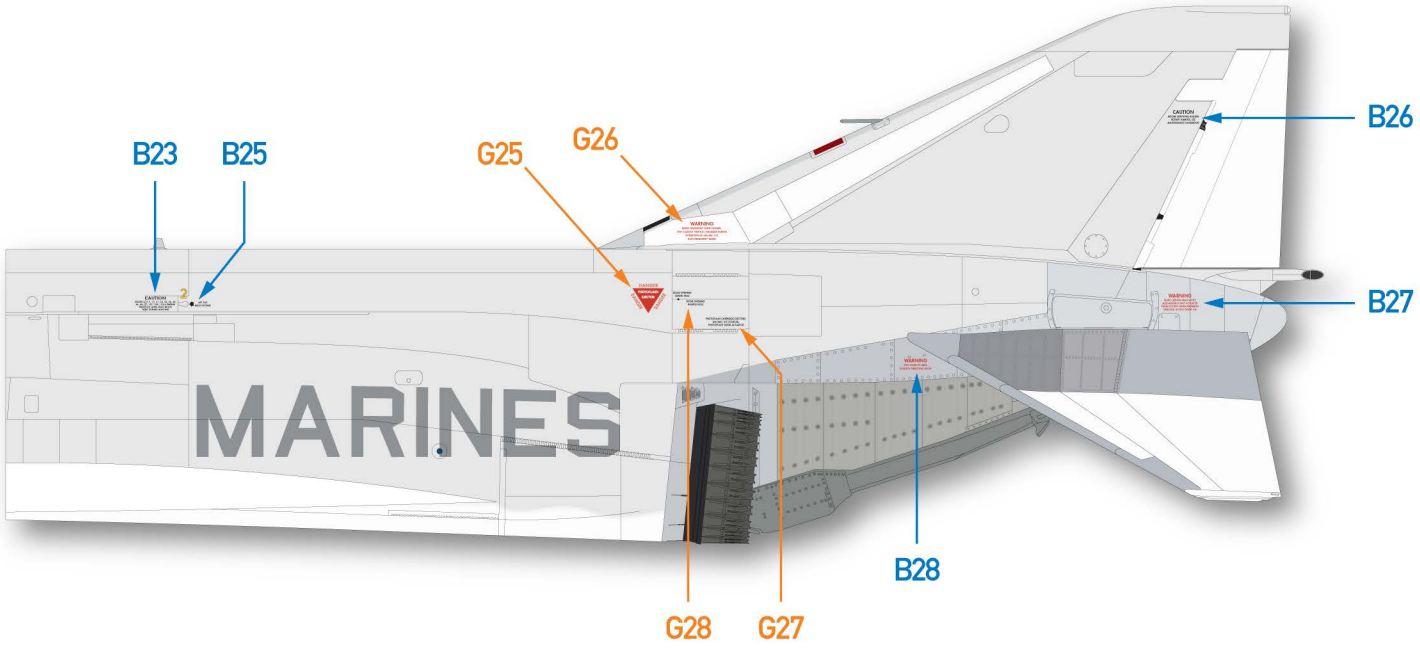
McDonnell RF-4B
Instructional Markings
Left Hand Fuselage





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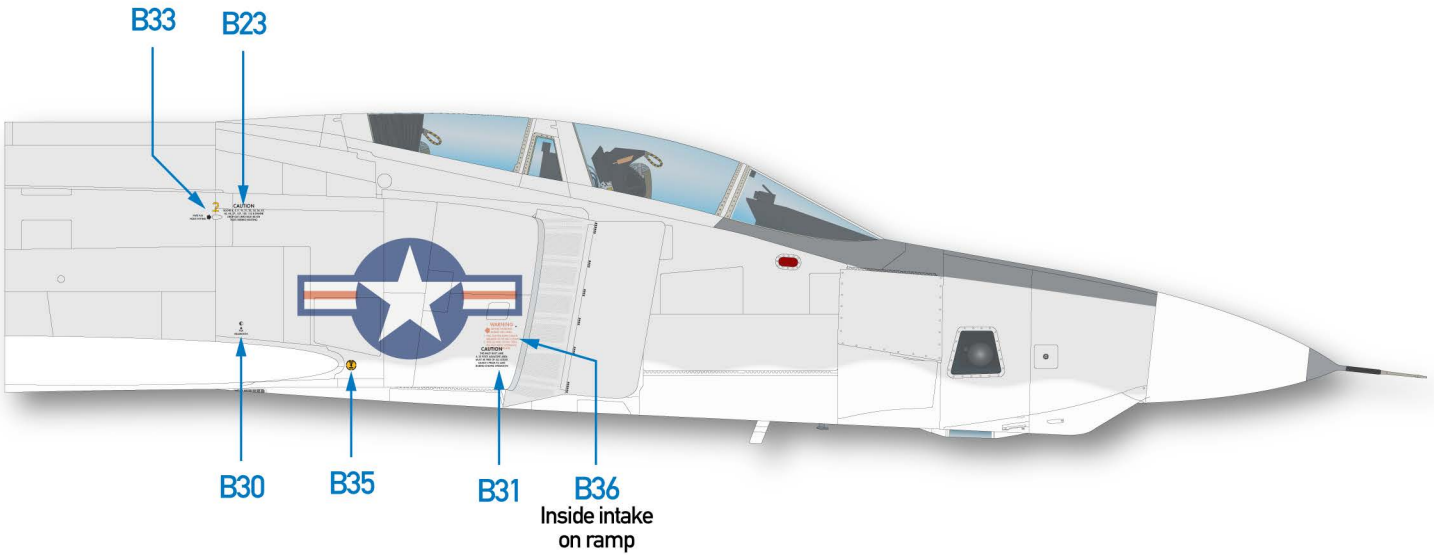
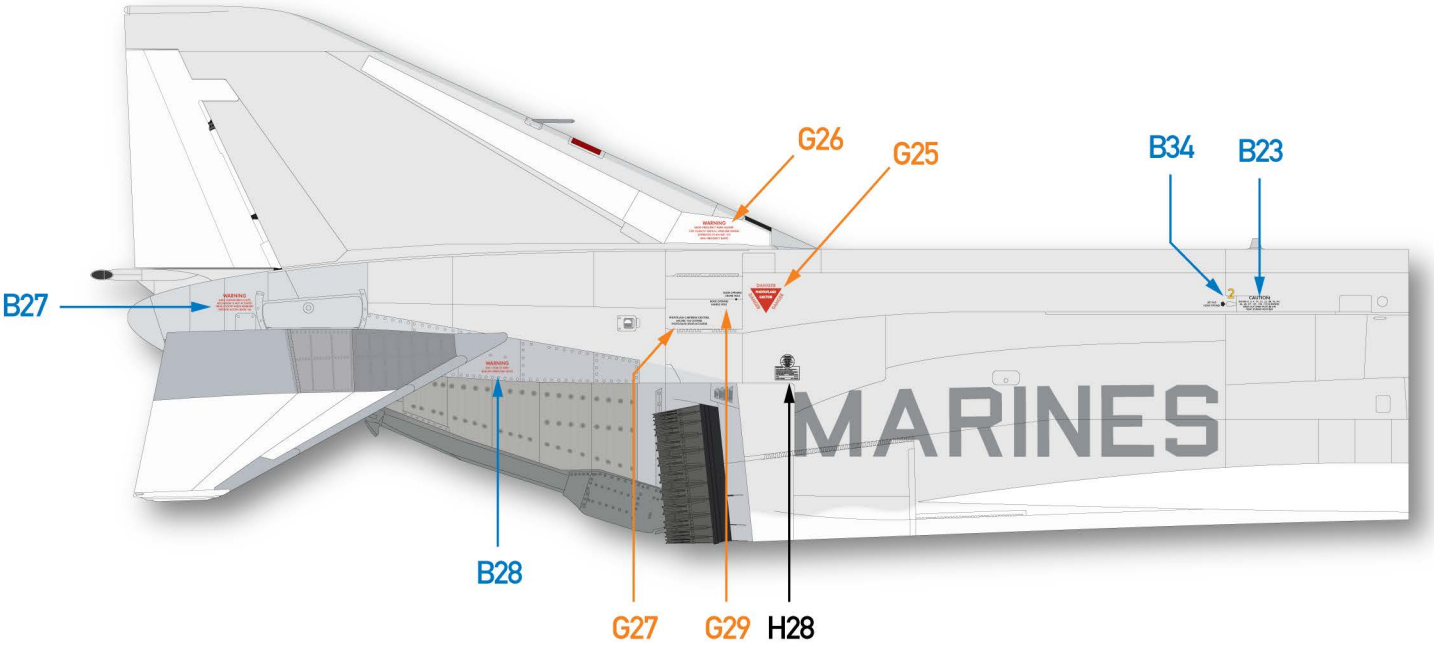
McDonnell RF-4B
Instructional Markings
Right Hand Fuselage





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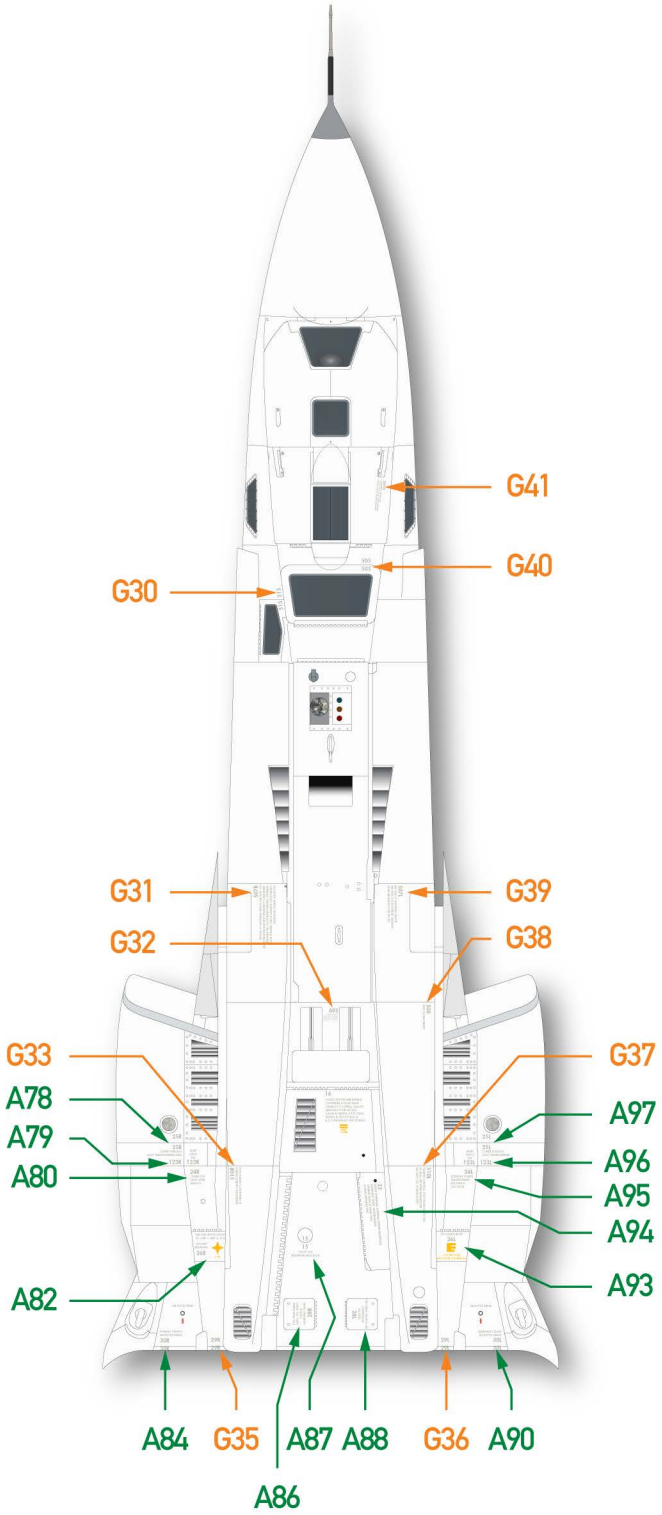
McDonnell RF-4B

Access Door Markings

Lower Forward Fuselage



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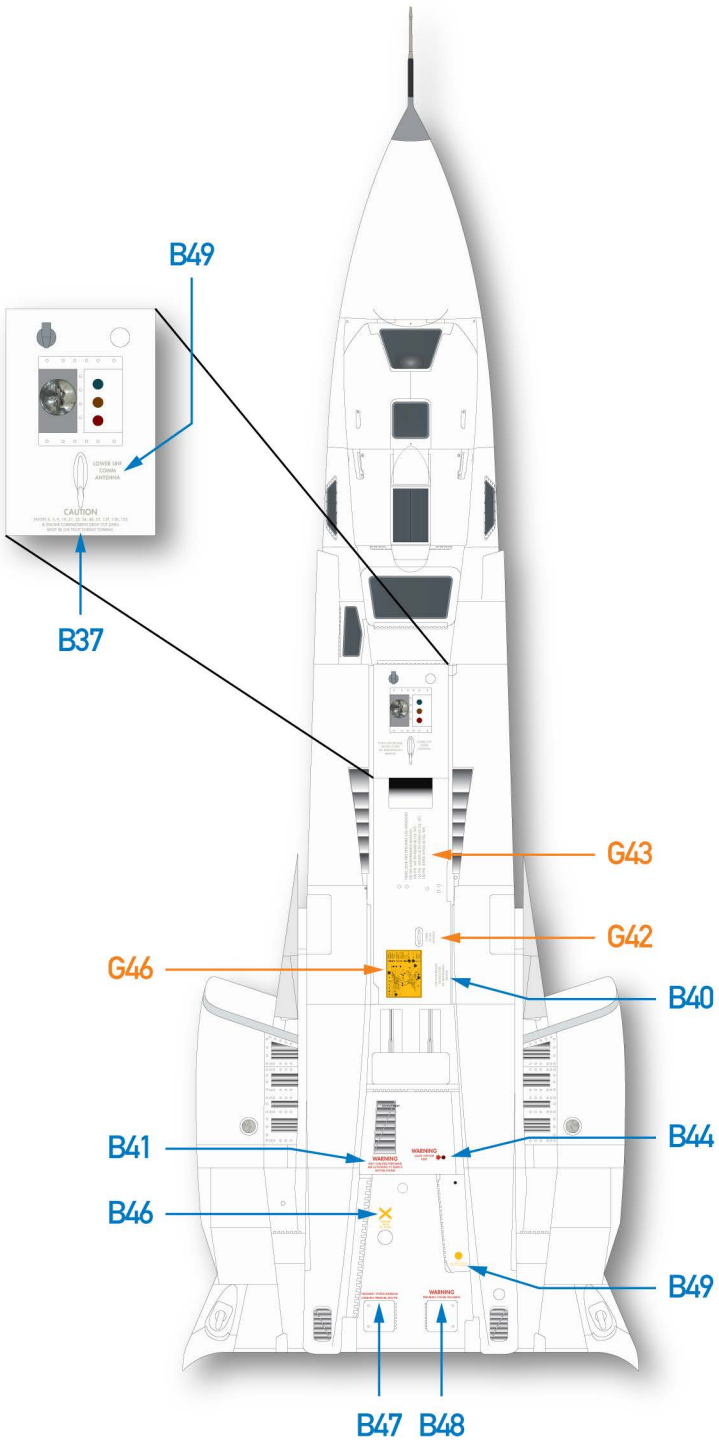
McDonnell RF-4B
Instructional Markings
Lower Forward Fuselage



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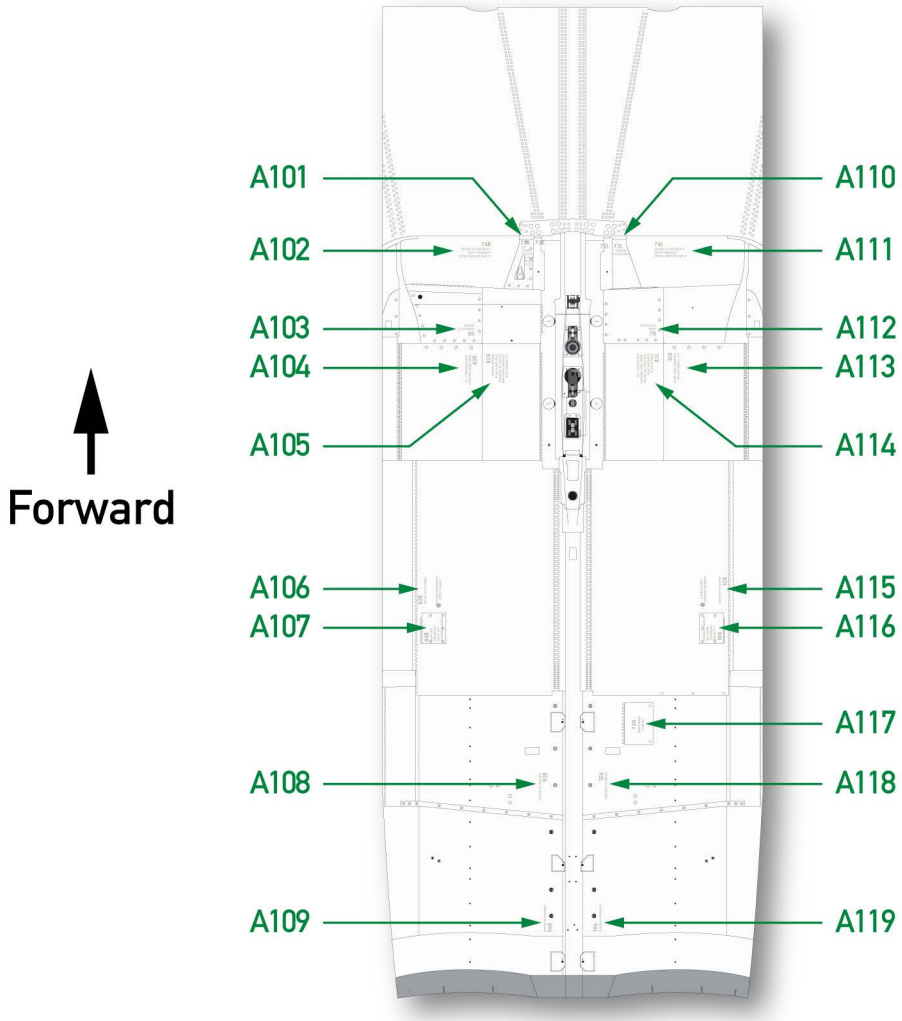
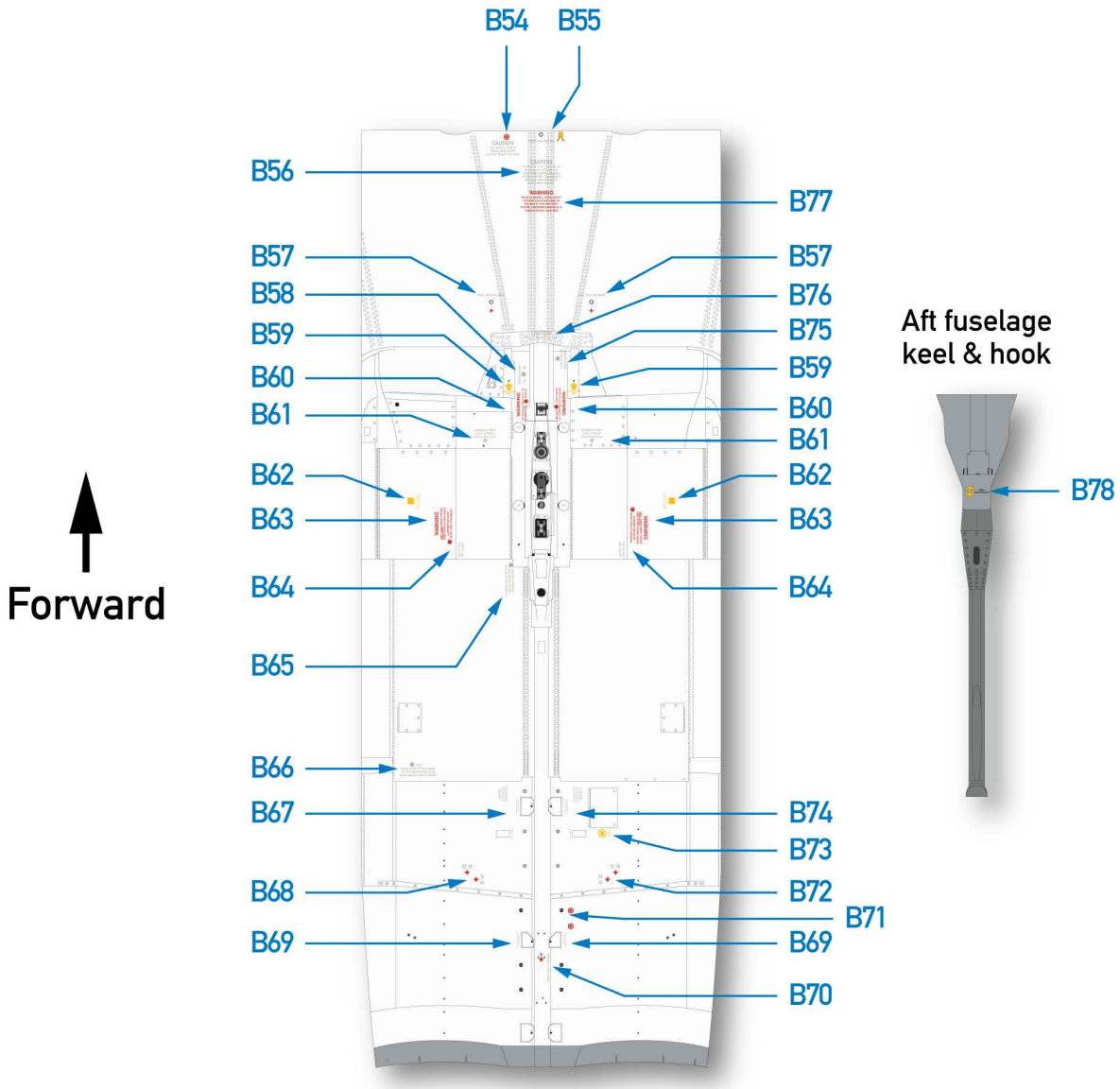
McDonnell RF-4B
Access Door Markings
Lower Aft Fuselage



McDonnell RF-4B
Instructional Markings
Lower Aft Fuselage



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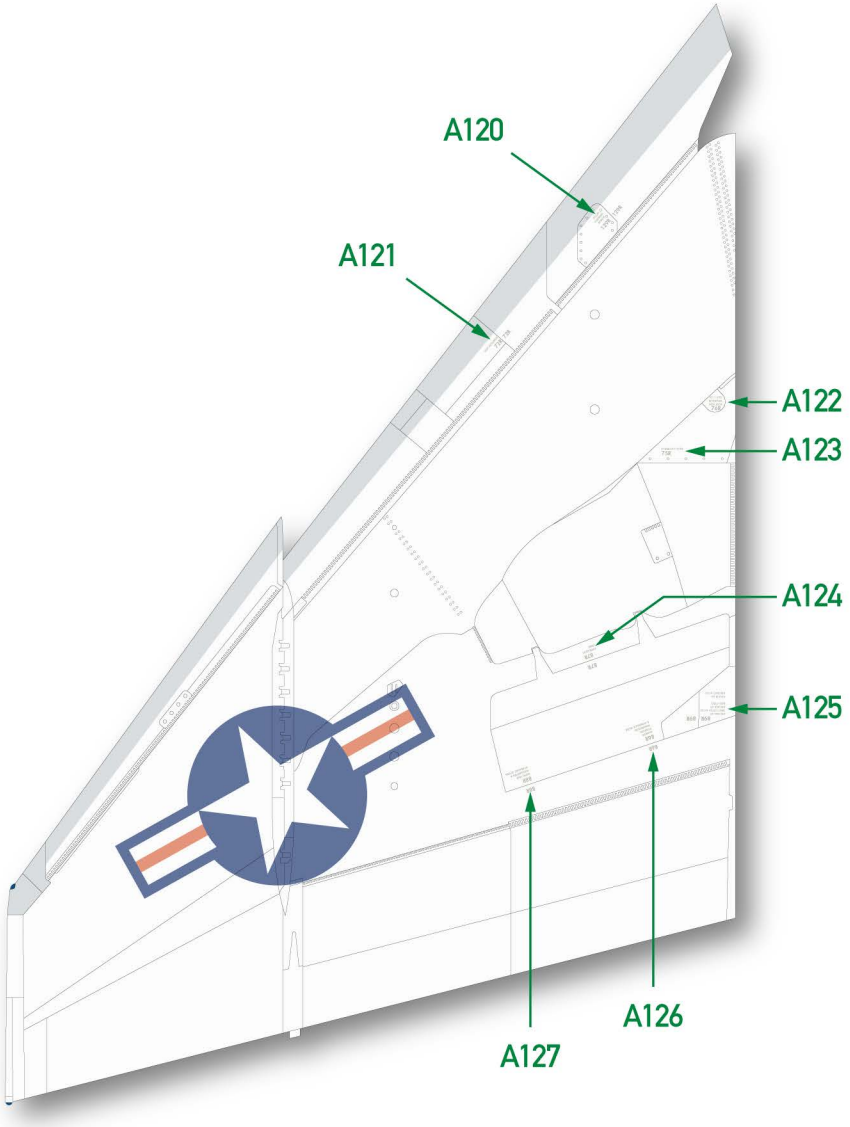
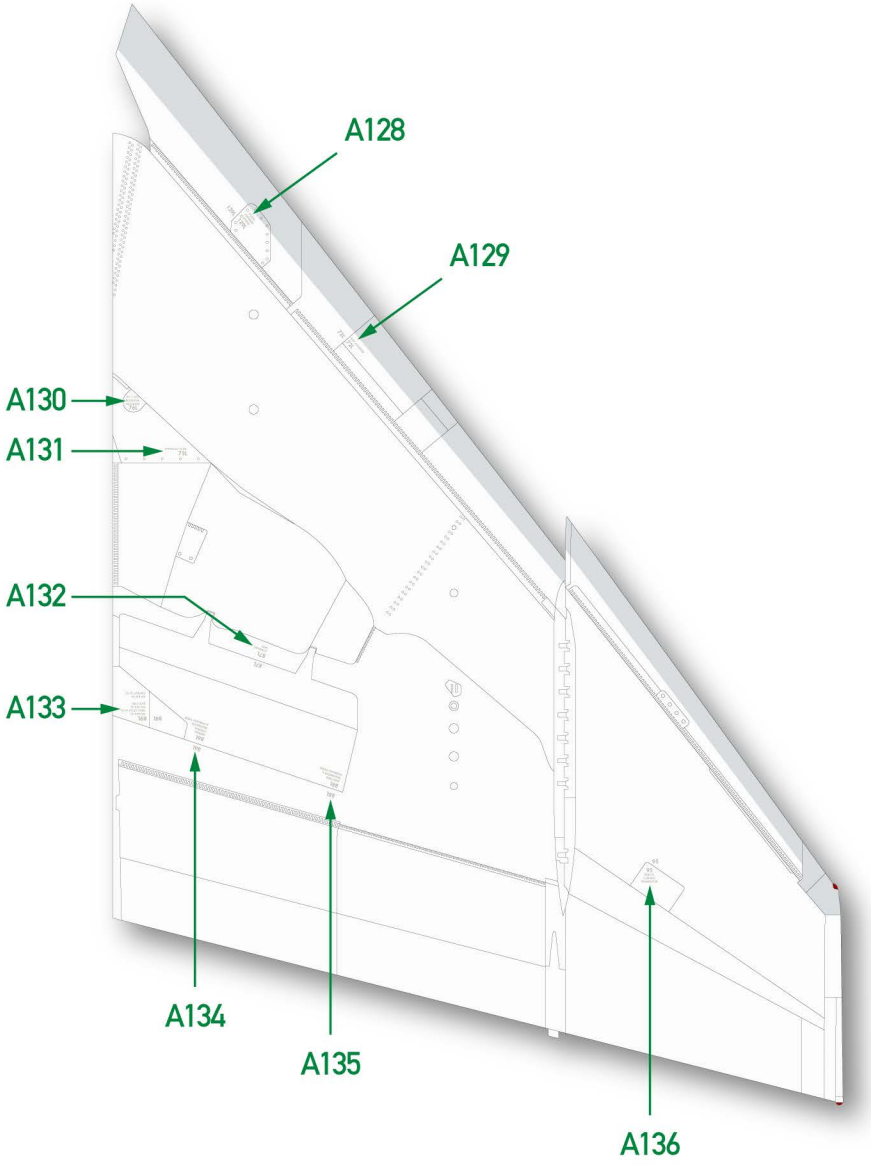
McDonnell RF-4B
Access Door Markings
Right Hand Lower Wing



McDonnell RF-4B
Access Door Markings
Left Hand Lower Wing



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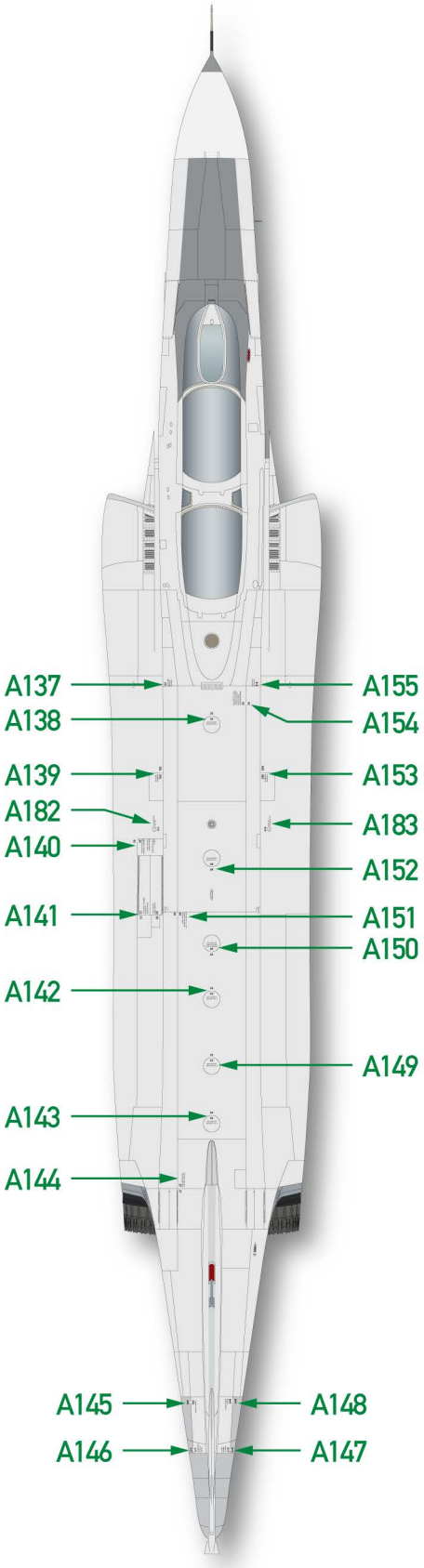
McDonnell RF-4B
Access Door Markings
Upper Fuselage



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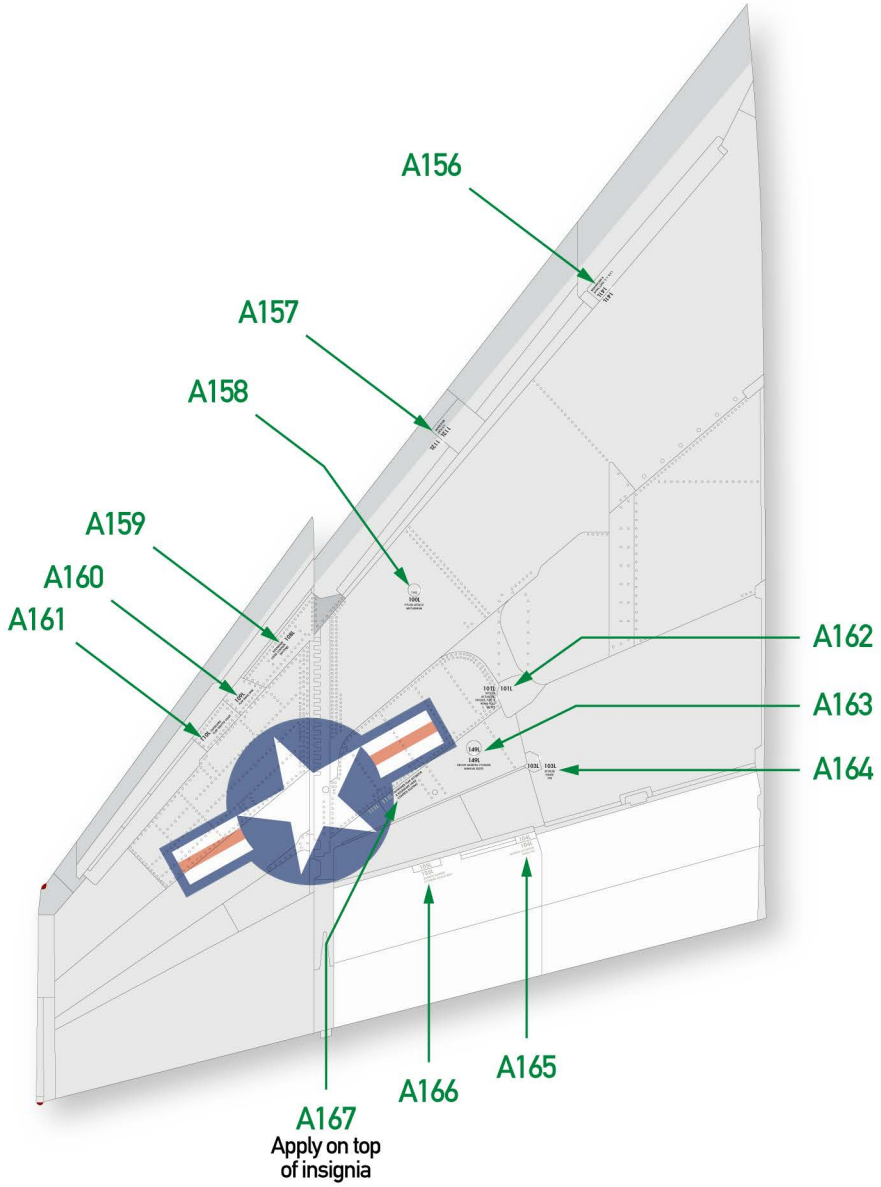
McDonnell RF-4B
Access Door Markings
Left Hand Upper Wing



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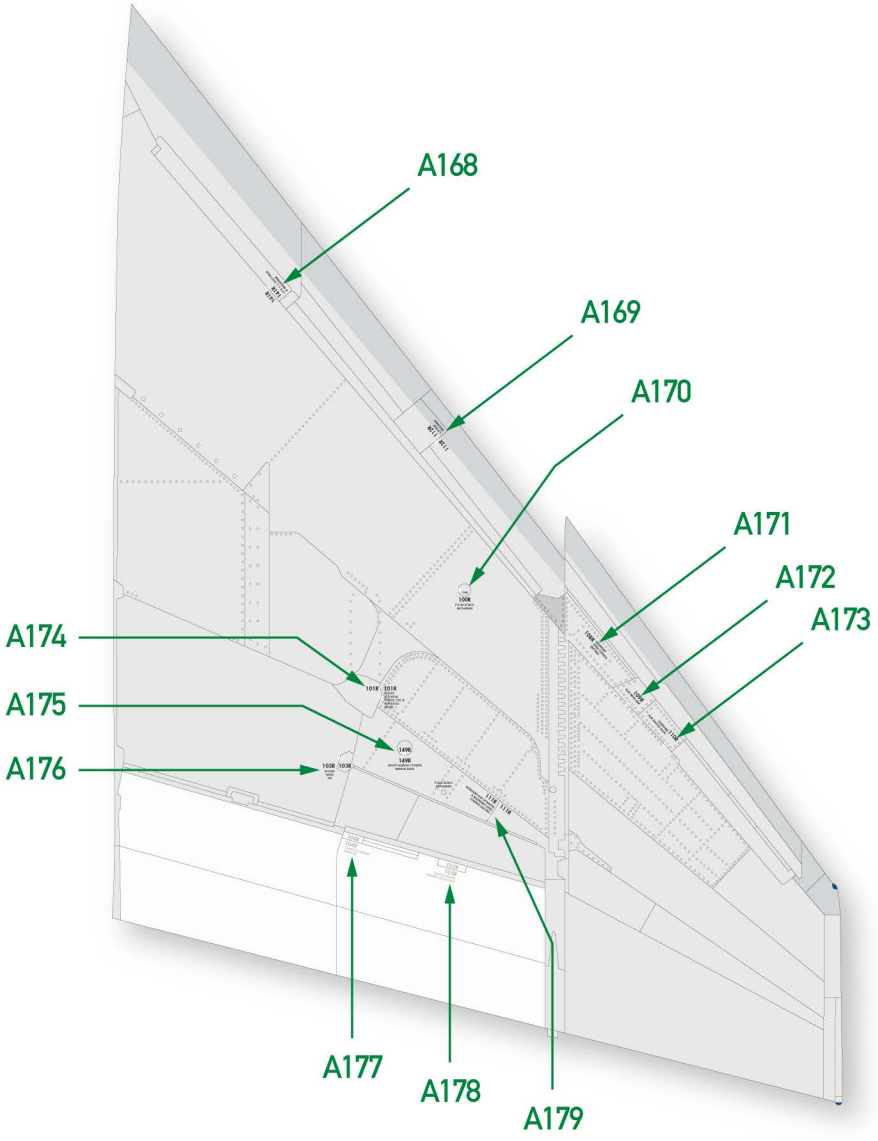
McDonnell RF-4B
Access Door Markings
Right Hand Upper Wing



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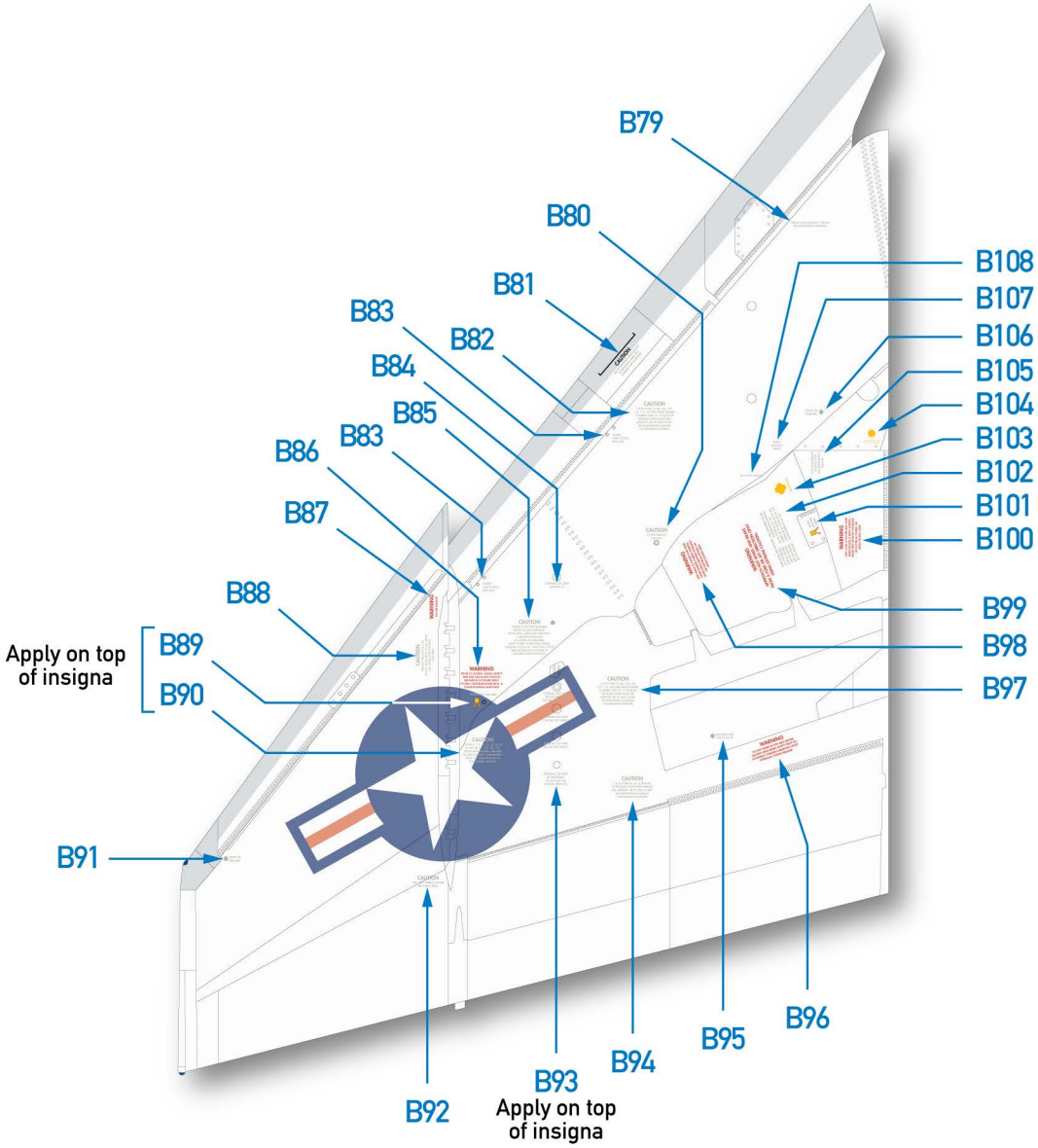
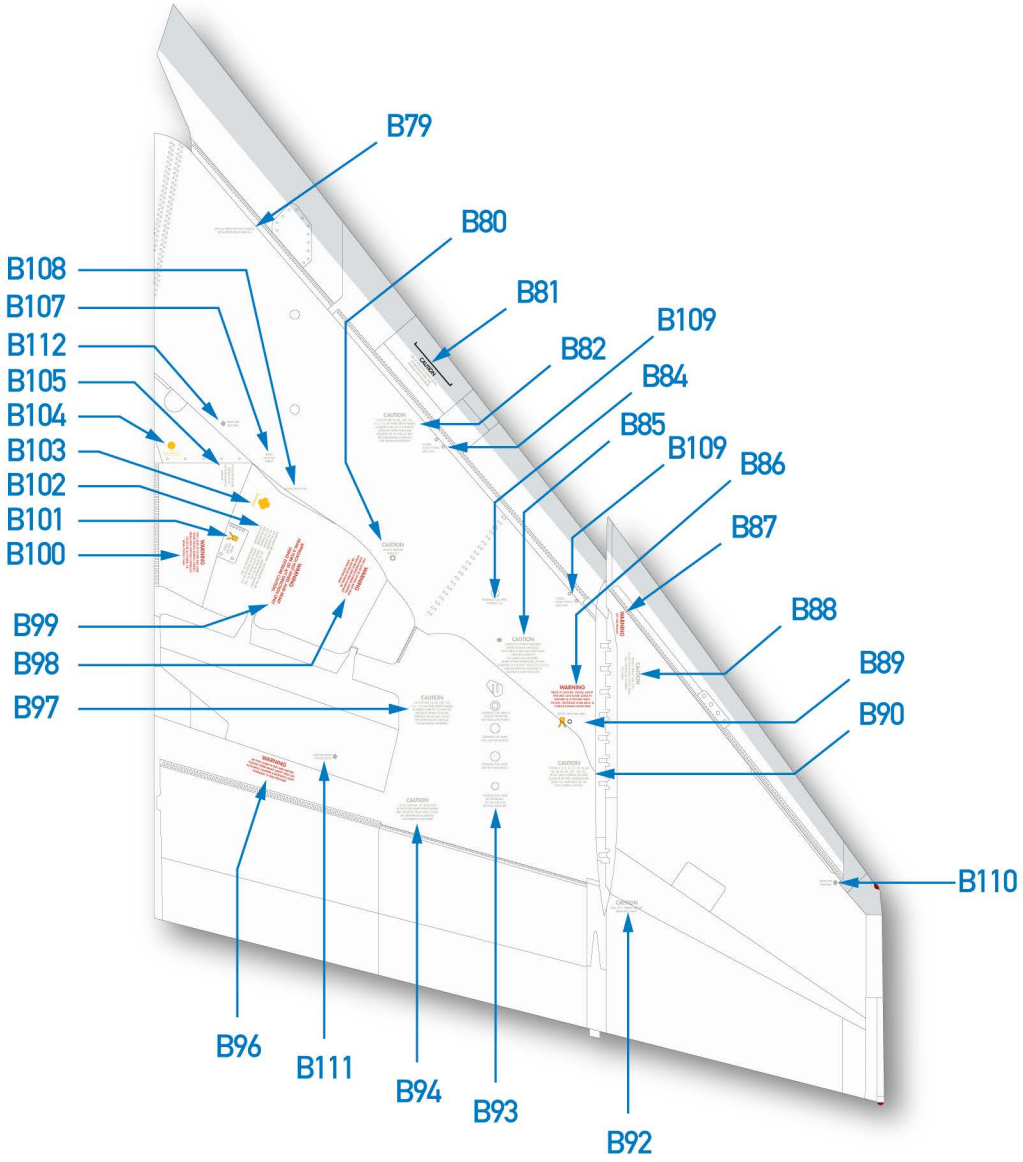
McDonnell RF-4B
Instructional Markings
Right Hand Lower Wing



McDonnell RF-4B
Instructional Markings
Left Hand Lower Wing



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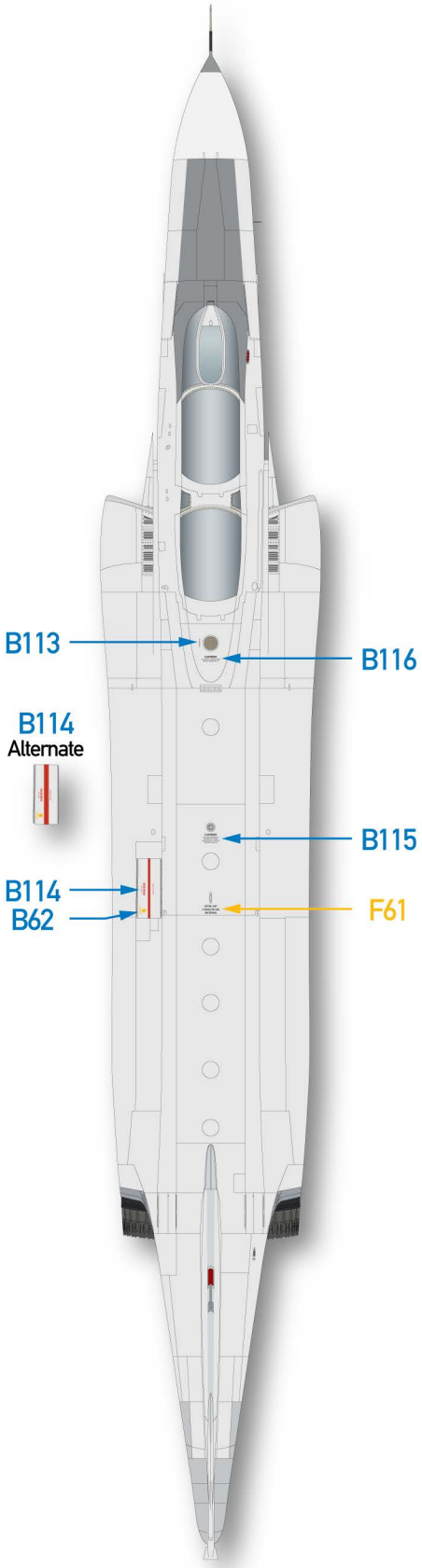
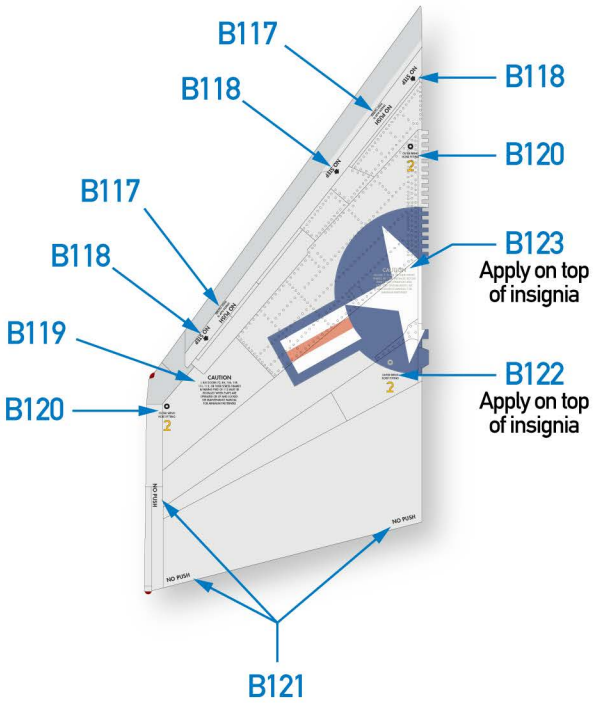
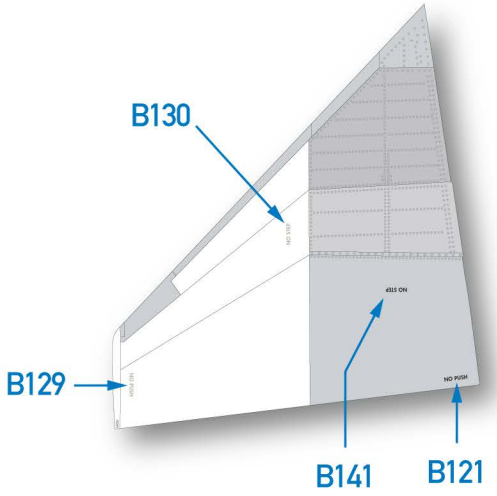
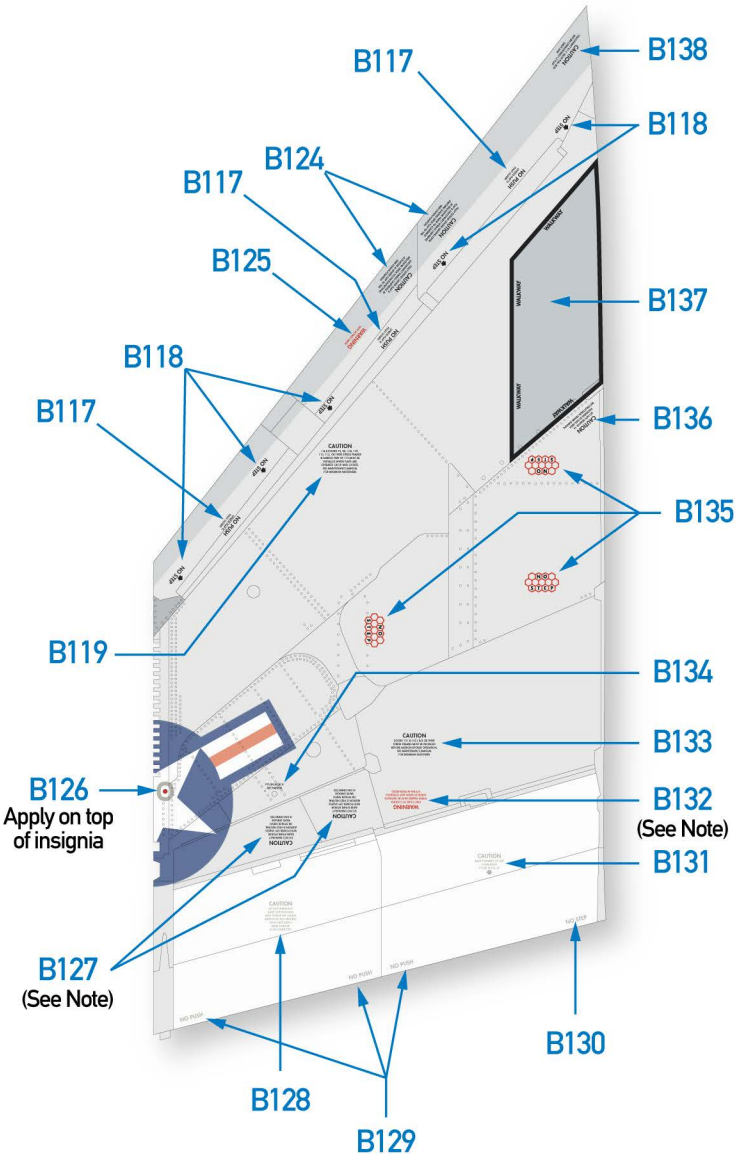
McDonnell RF-4B
Instructional Markings
Upper Fuselage



McDonnell RF-4B
Instructional Markings
Left Hand Upper Wing & Horizontal Stabilator



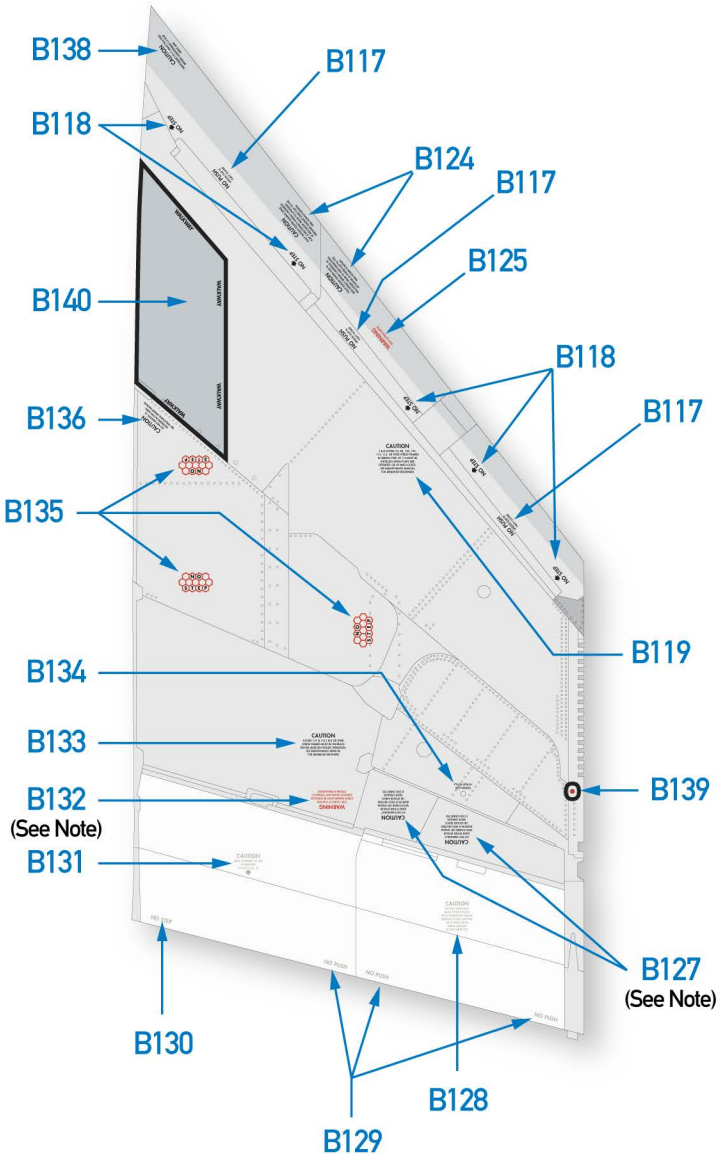


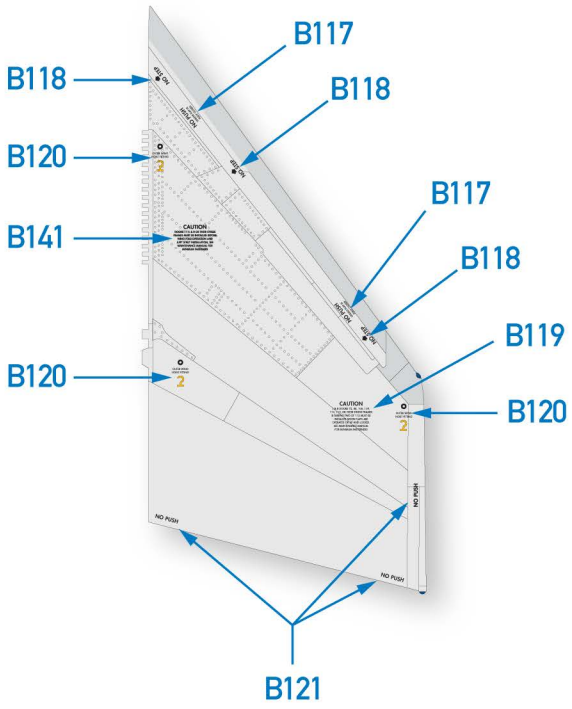


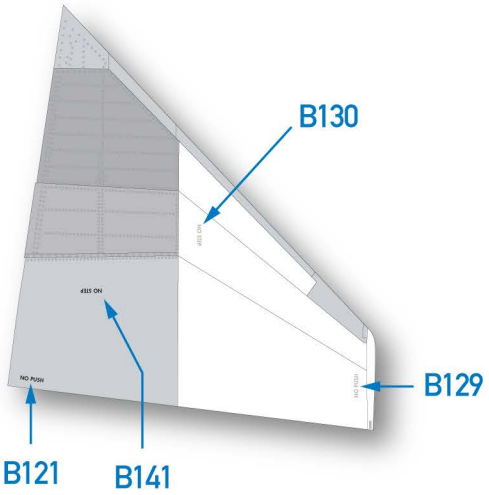
Note:

B127/B132: Note the orientation of these items. Tops of letters face the trailing edge of the wing.

McDonnell RF-4B
Instructional Markings
Right Hand Upper Wing & Horizontal Stabilator







Note:

B127/B132: Note the orientation of these items. Tops of letters face the trailing edge of the wing.

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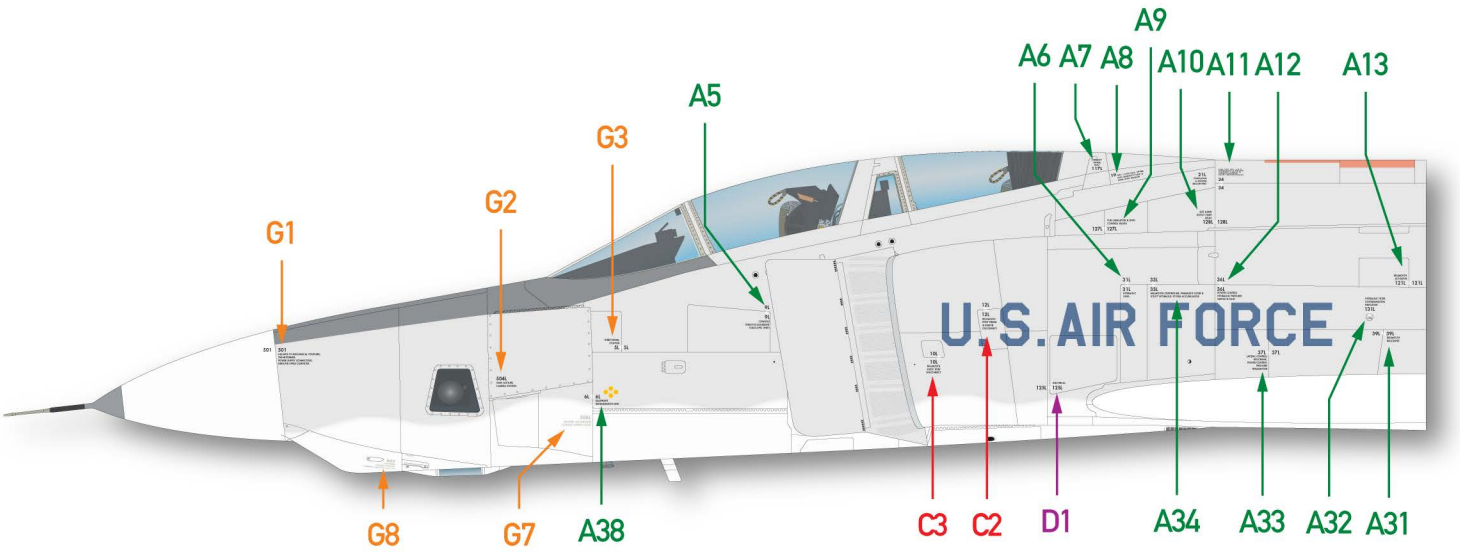
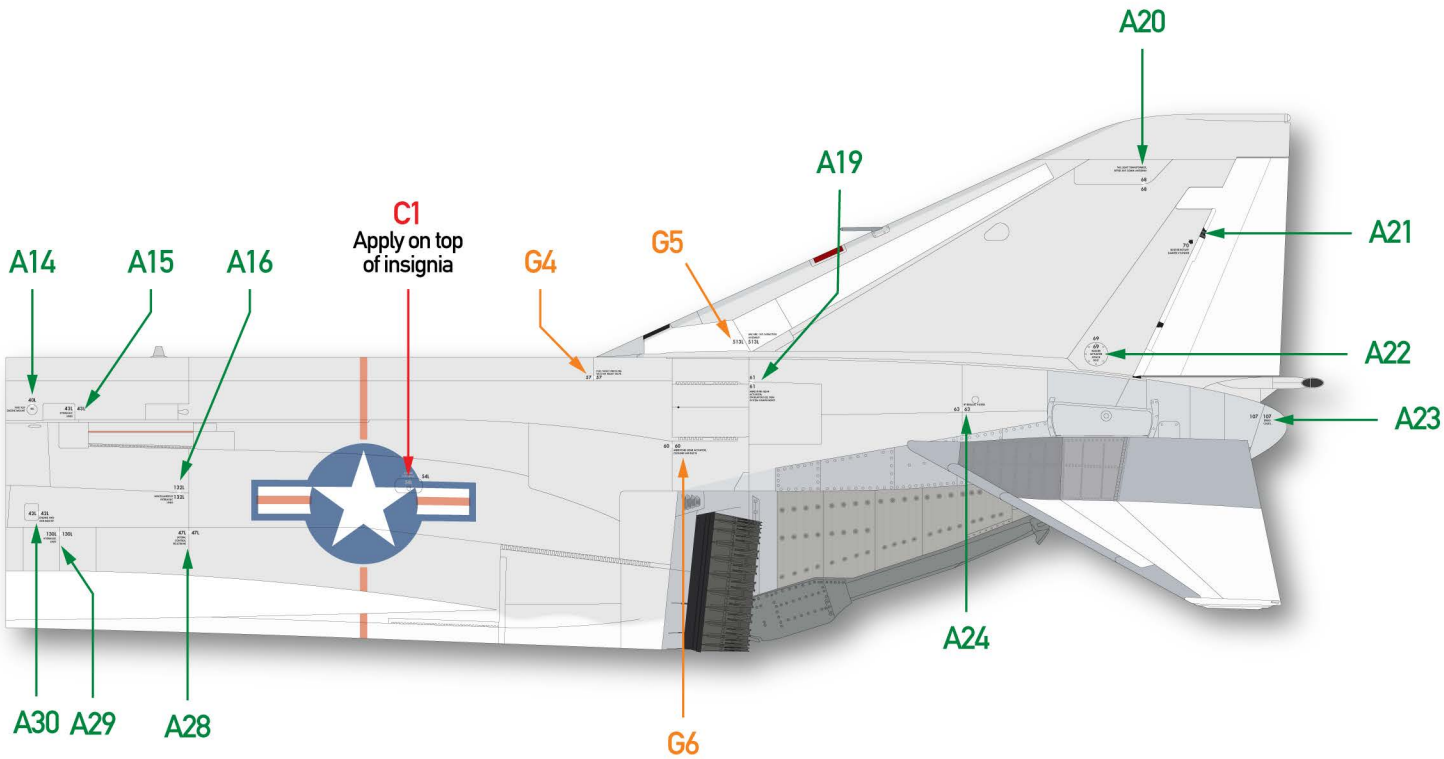
McDonnell RF-4C (Early)
Access Door Markings
Left Hand Fuselage





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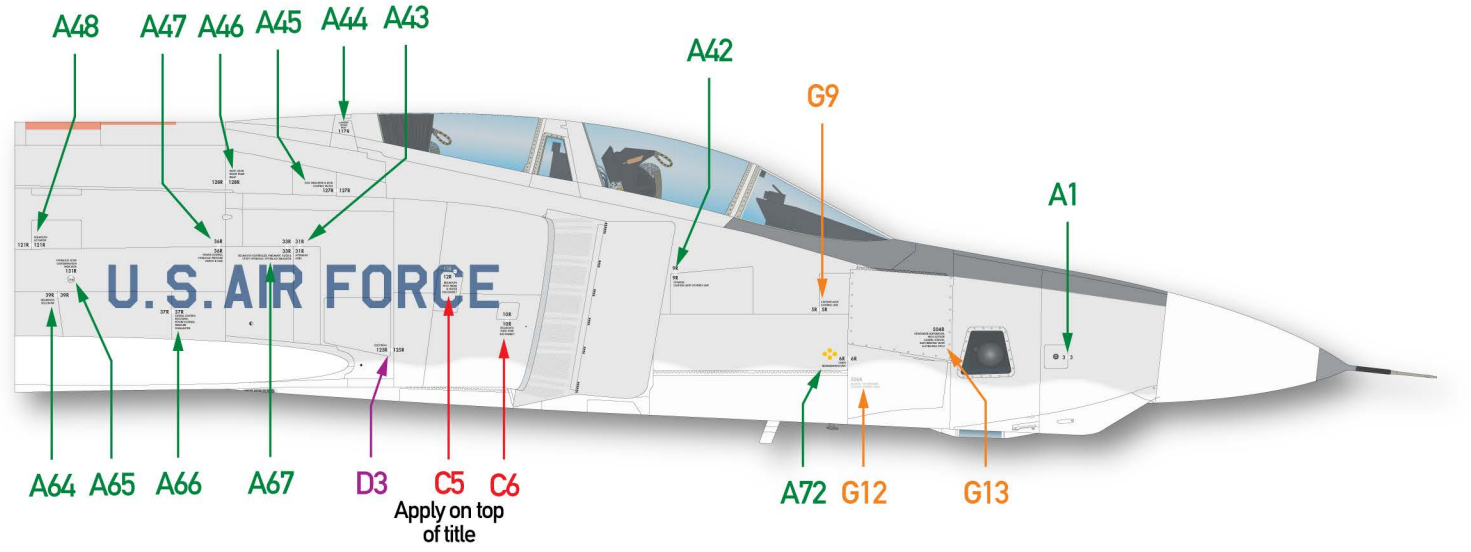
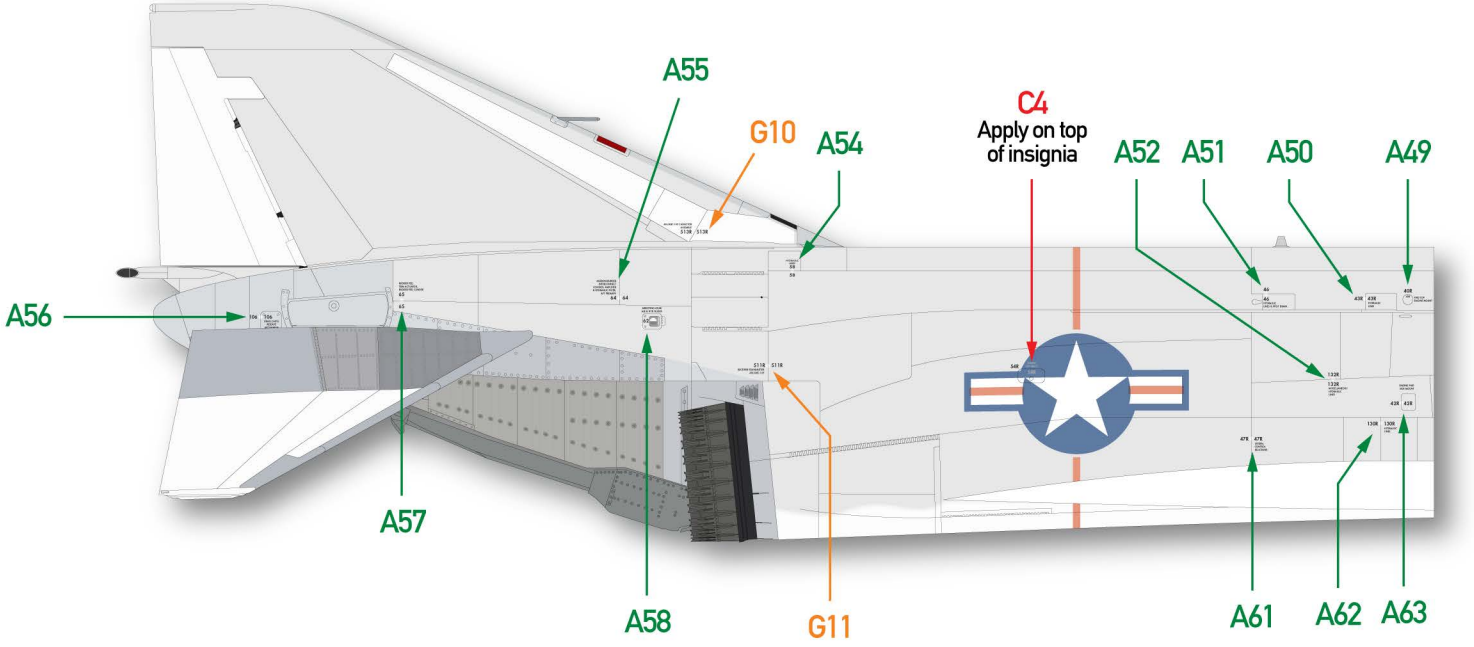
McDonnell RF-4C (Early)

Access Door Markings

Right Hand Fuselage





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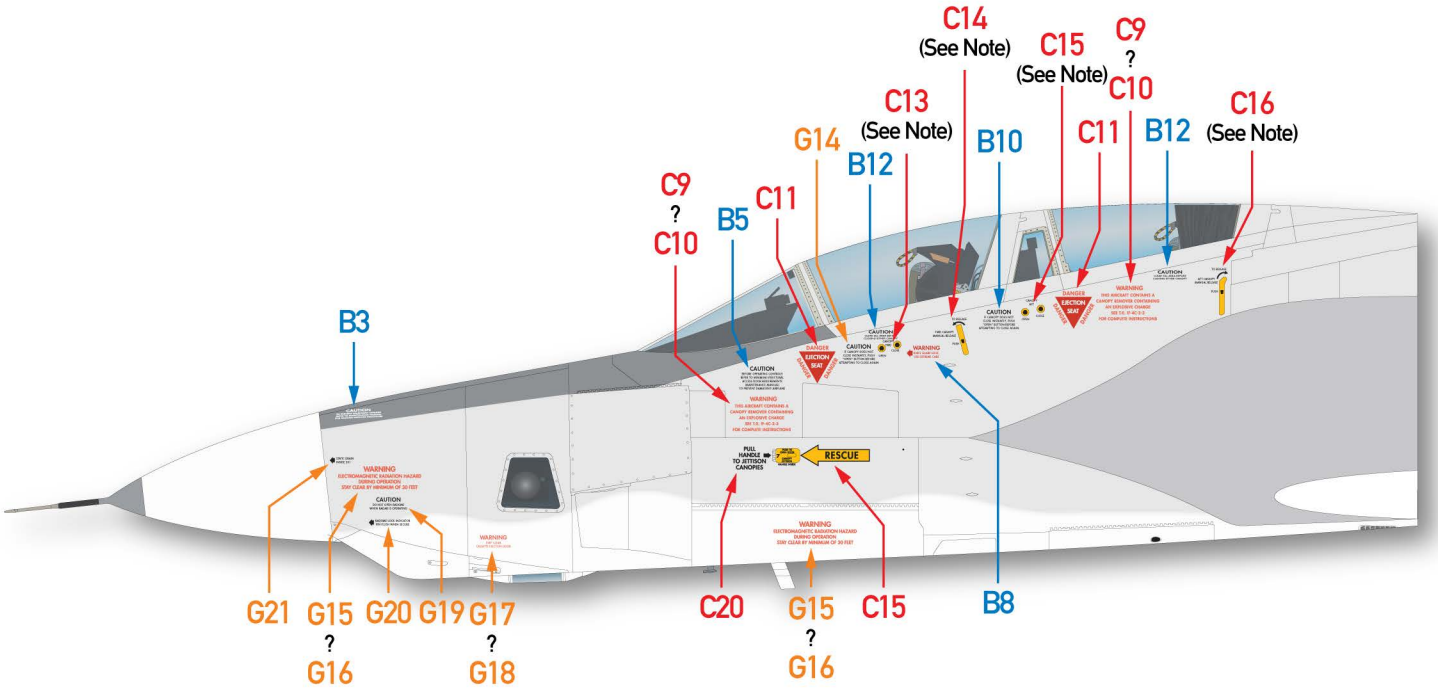
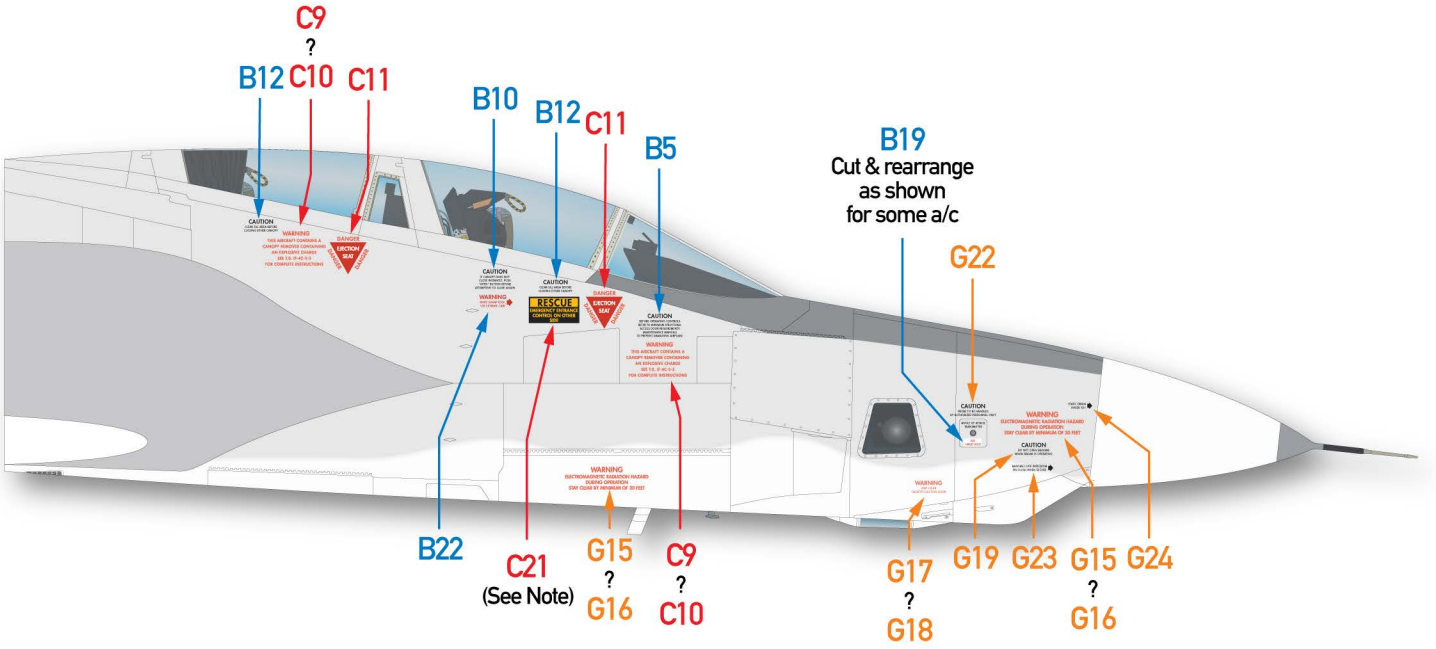
McDonnell RF-4C (Early)
Instructional Markings
Forward Fuselage





Notes:

C9/C10, G15/G16: The salmon colored stencils (C9/G15) were most commonly used, but the bright red versions (C10/G16) were also applied on some aircraft.

C13 - C16: Canopy open/close buttons & handles are provided to fit the ZM and Tamiya kit scribing (as closely as can make them), as well as in the actual scale size and shape based on tracings and measurements of these items on an actual F-4. The kit scribing (on every existing 1/48 F-4 kit we have found) is not really accurate in size or shape. We recommend filling the scribed detail and using the "B" versions of these decals, which are accurate scale representations of the real thing.

C21: Two variations are provided. The one shown in the drawing is by far the most common.

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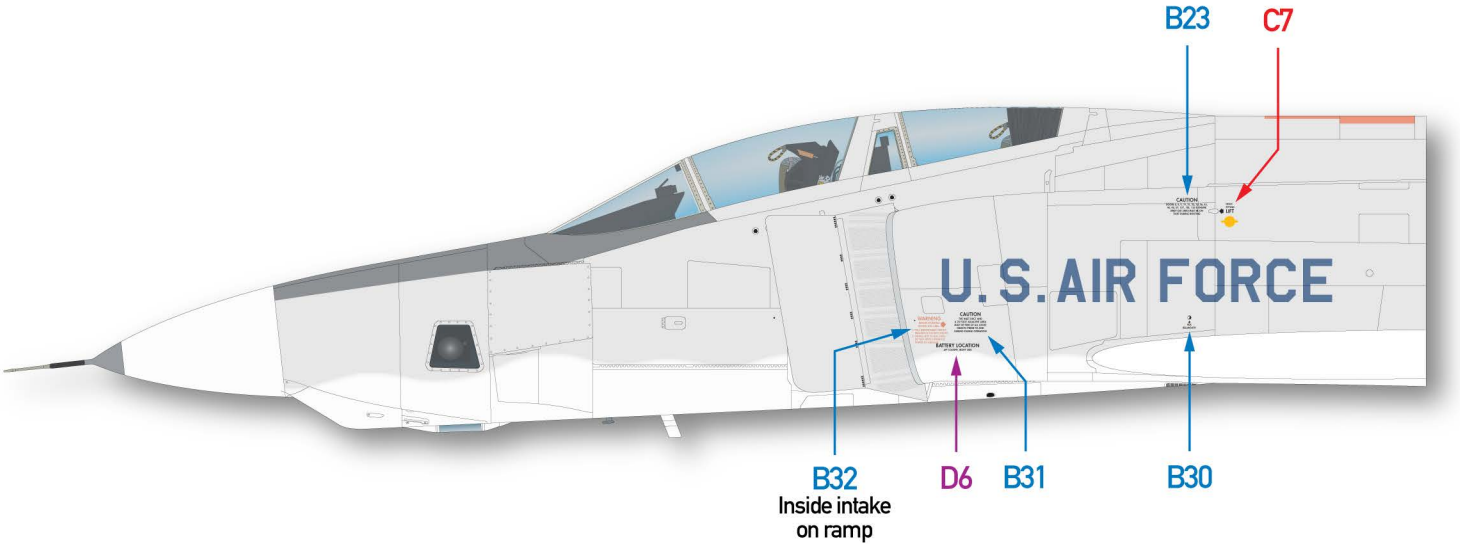
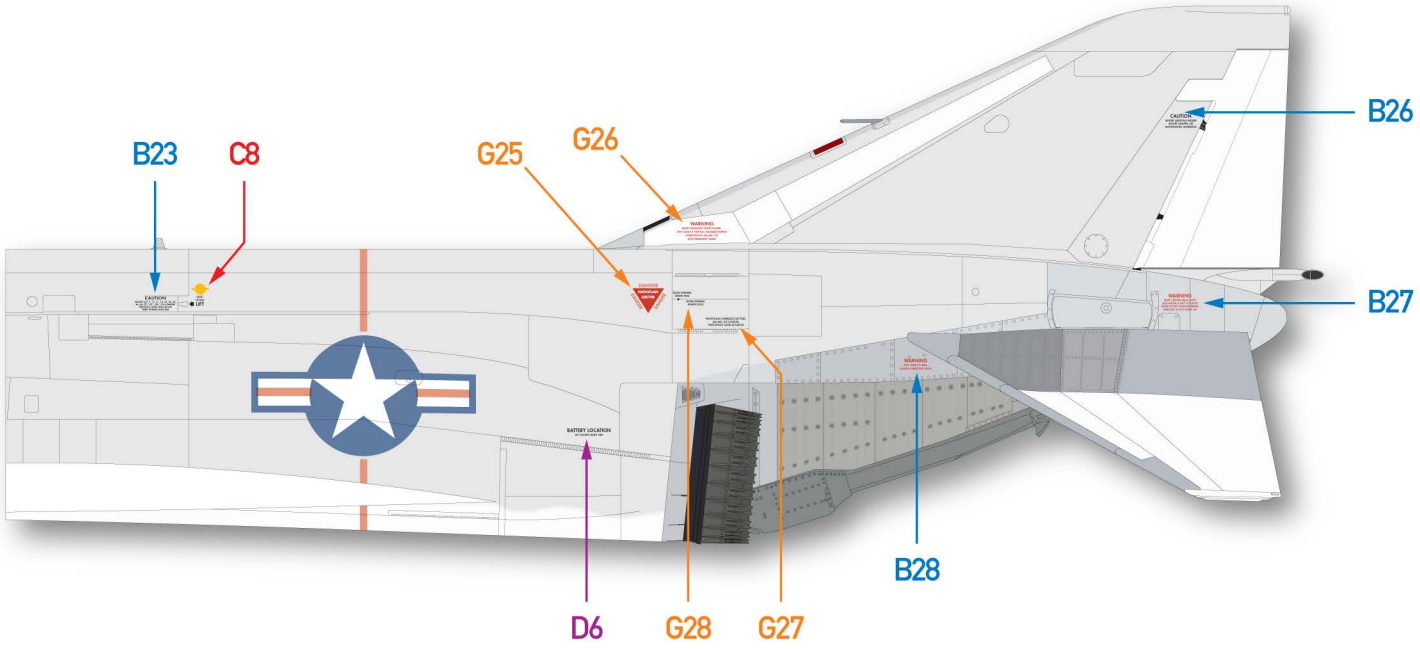
McDonnell RF-4C (Early)
Instructional Markings
Left Hand Fuselage





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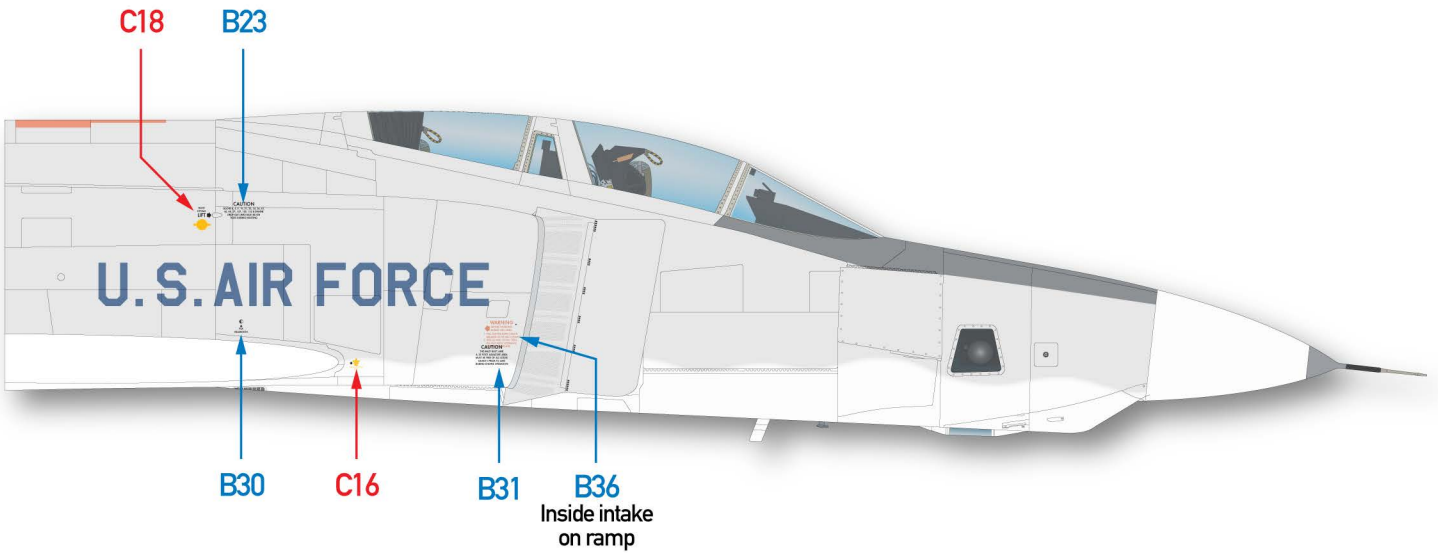
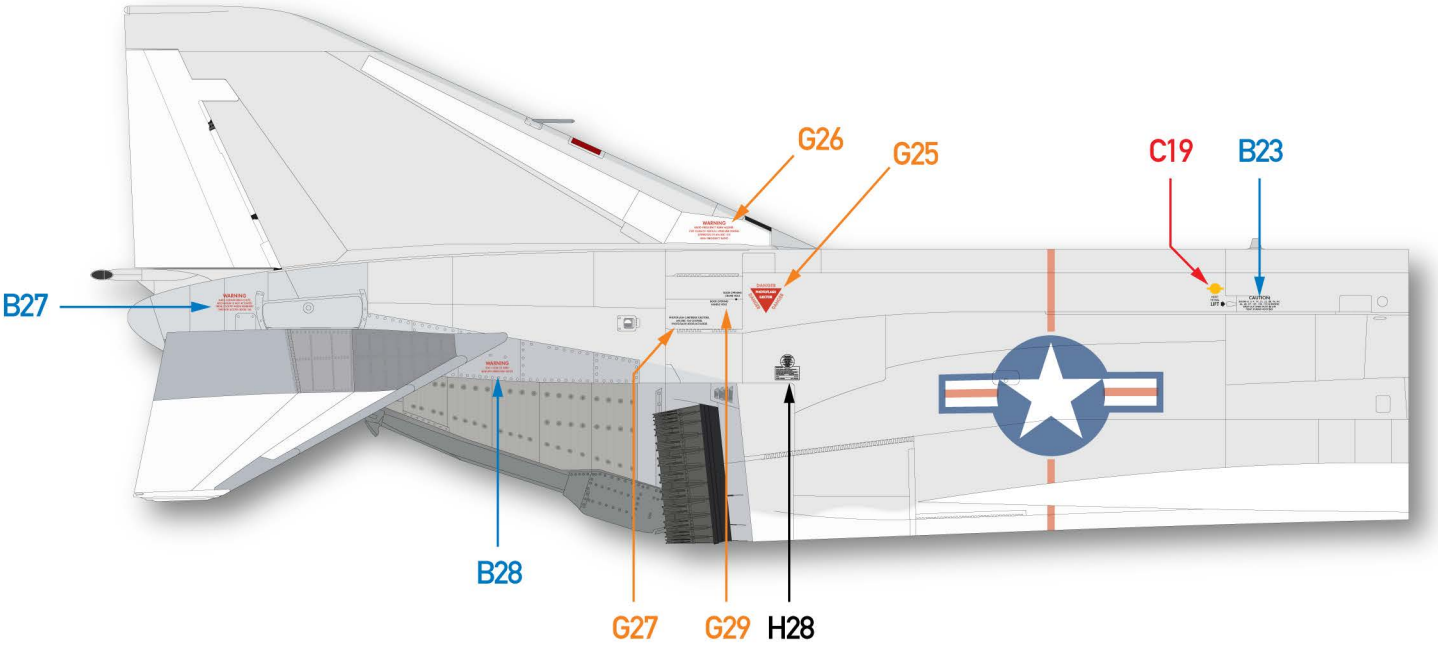
McDonnell RF-4C (Early)
Instructional Markings
Right Hand Fuselage





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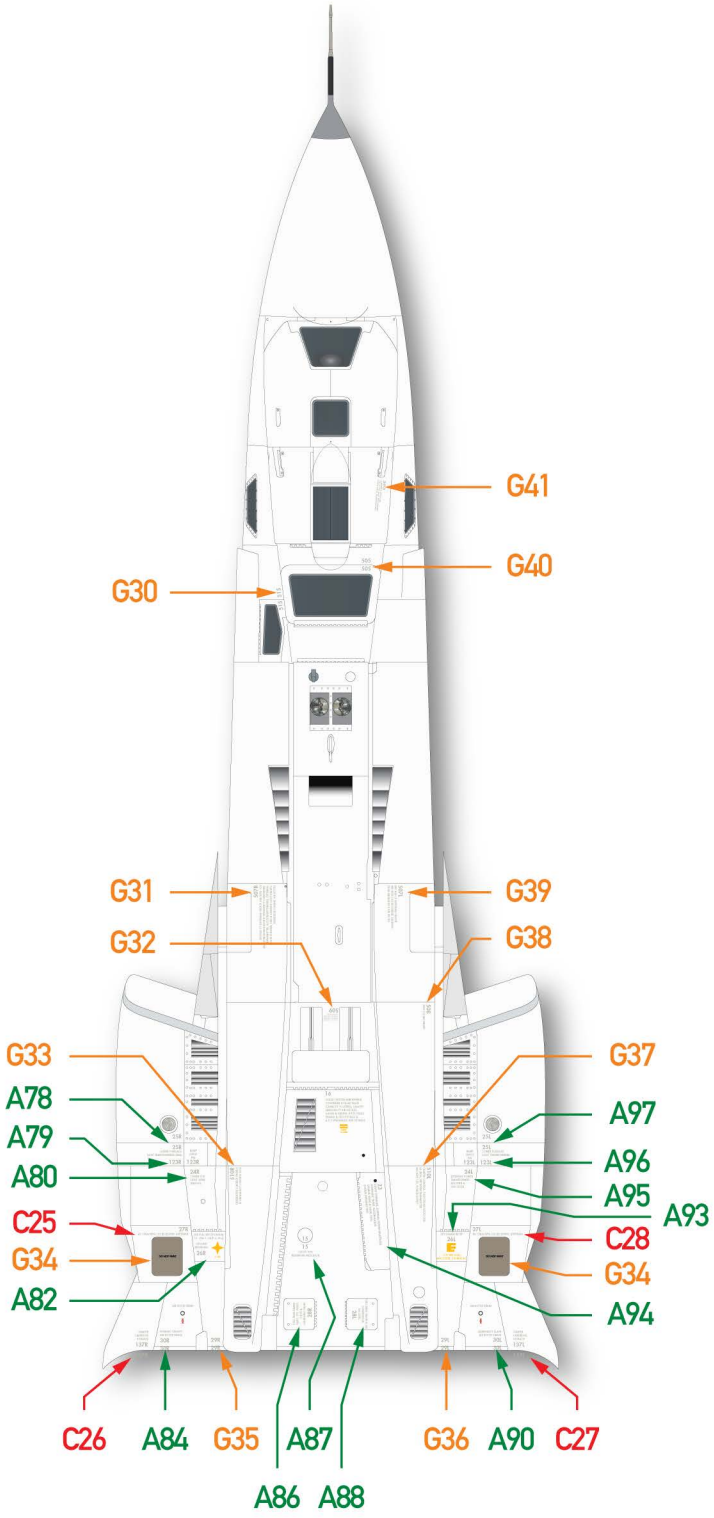
McDonnell RF-4C (Early)

Access Door Markings

Lower Forward Fuselage



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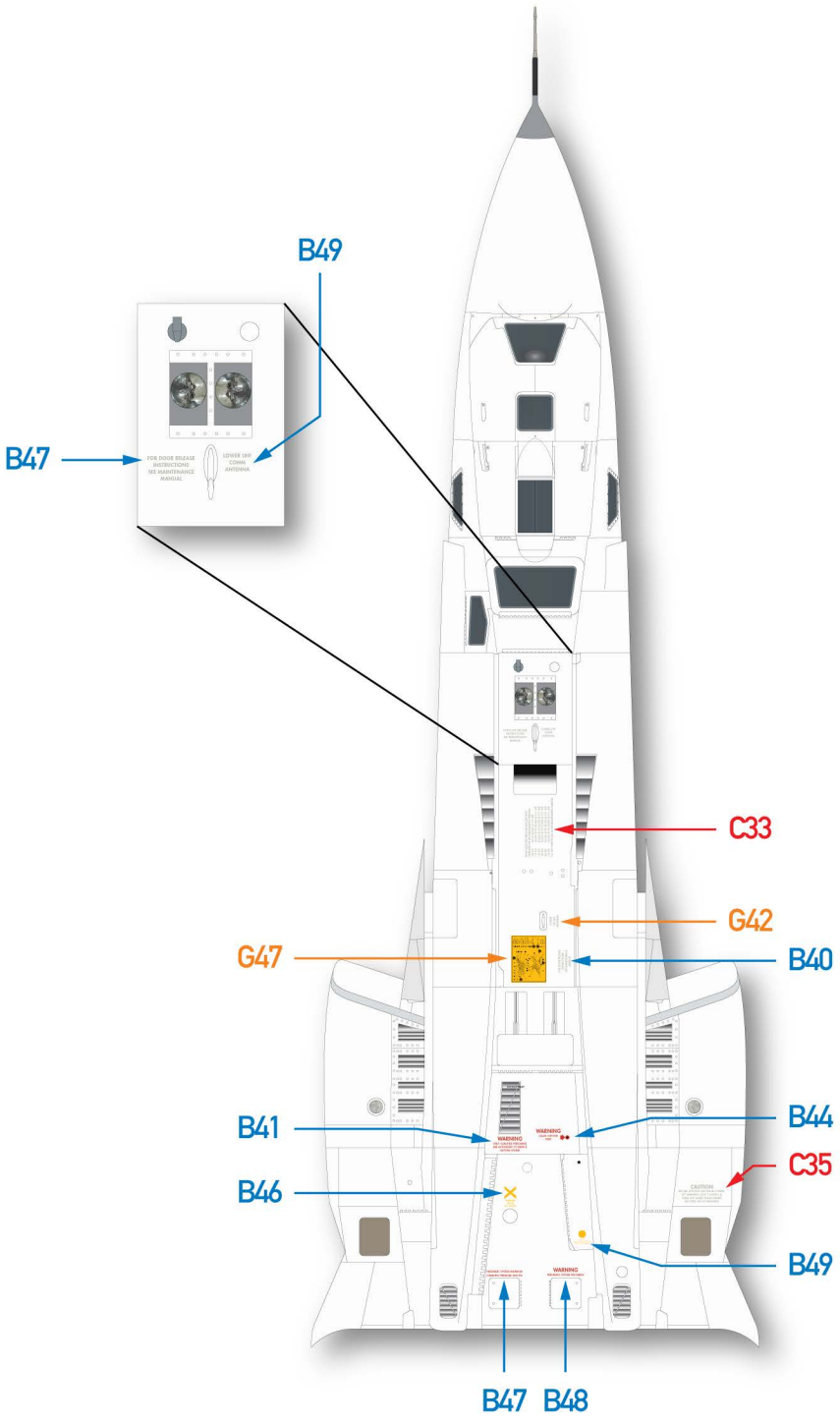
McDonnell RF-4C (Early)
Instructional Markings
Lower Forward Fuselage



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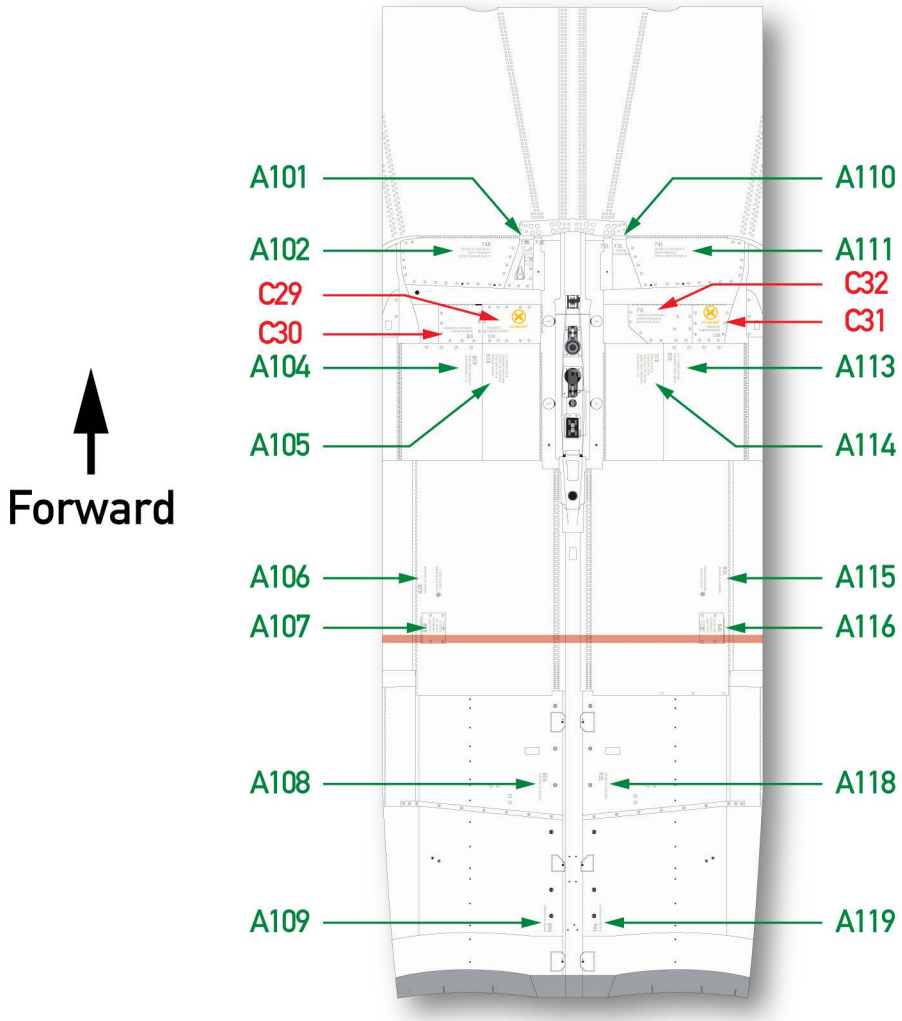
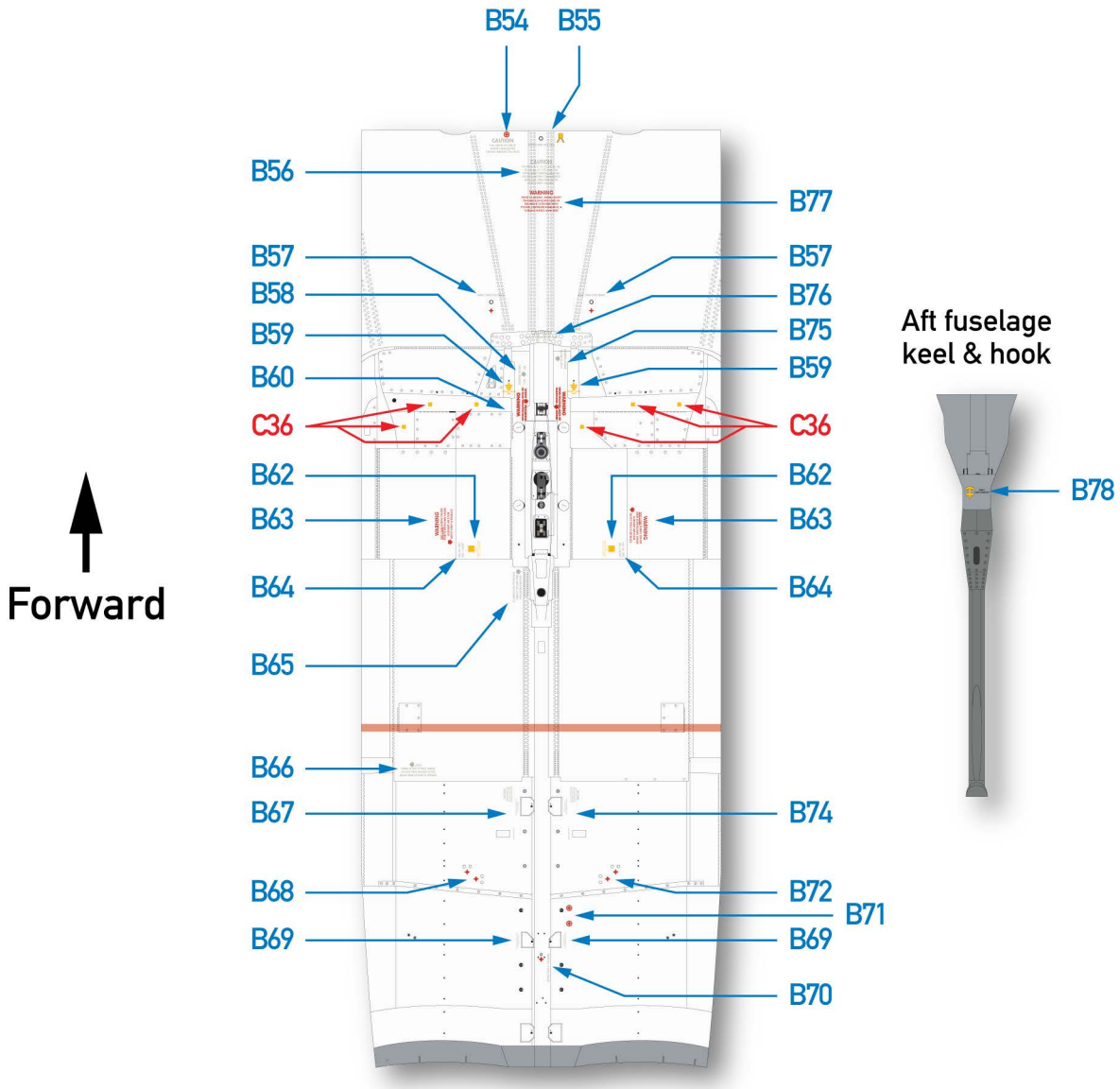
McDonnell RF-4C (Early)
Access Door Markings
Lower Aft Fuselage



McDonnell RF-4C (Early)
Instructional Markings
Lower Aft Fuselage



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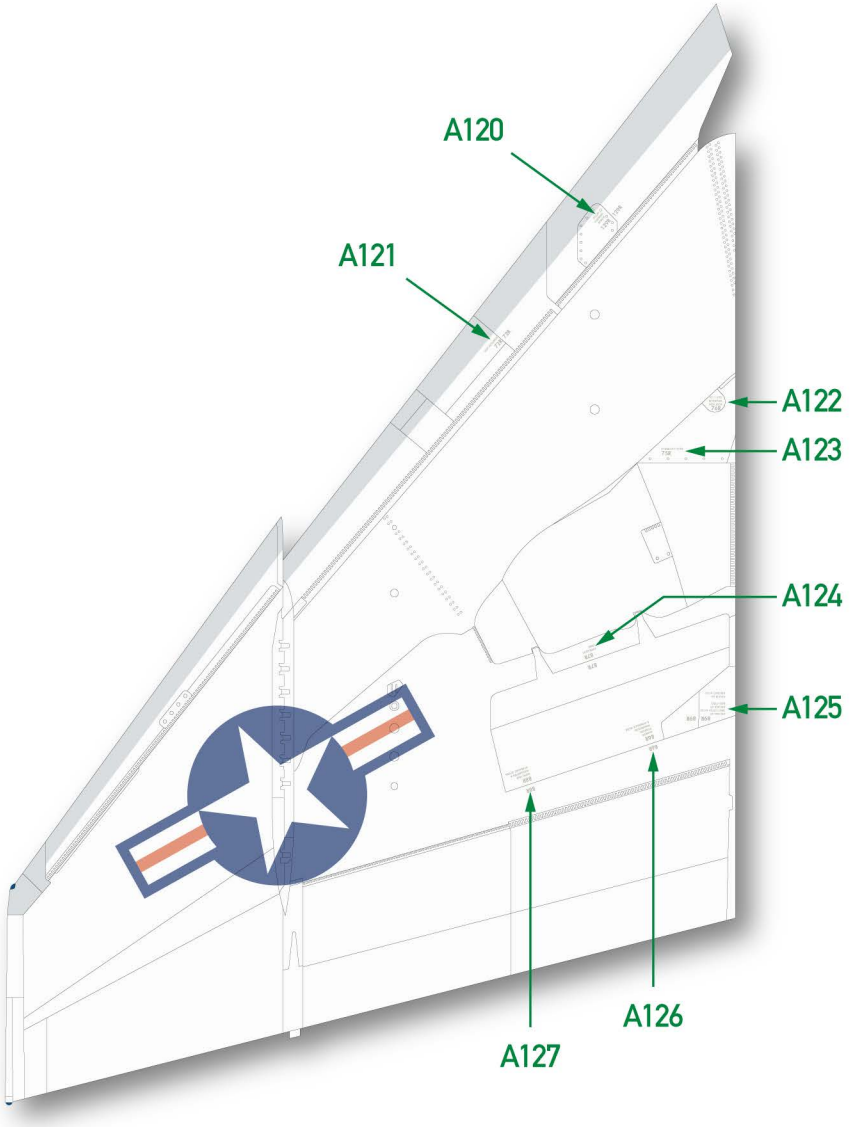
McDonnell RF-4C (Early)
Access Door Markings
Right Hand Lower Wing



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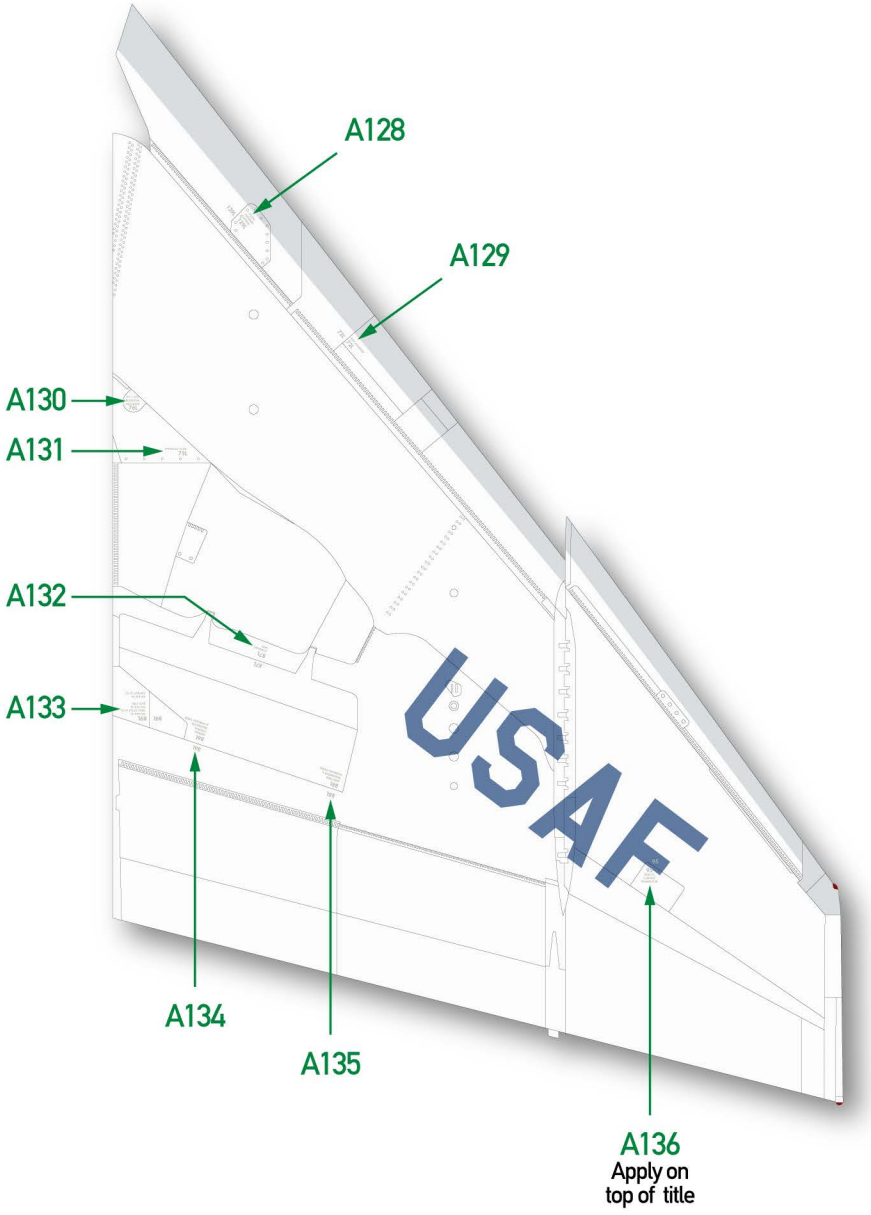
McDonnell RF-4C (Early)
Access Door Markings
Left Hand Lower Wing



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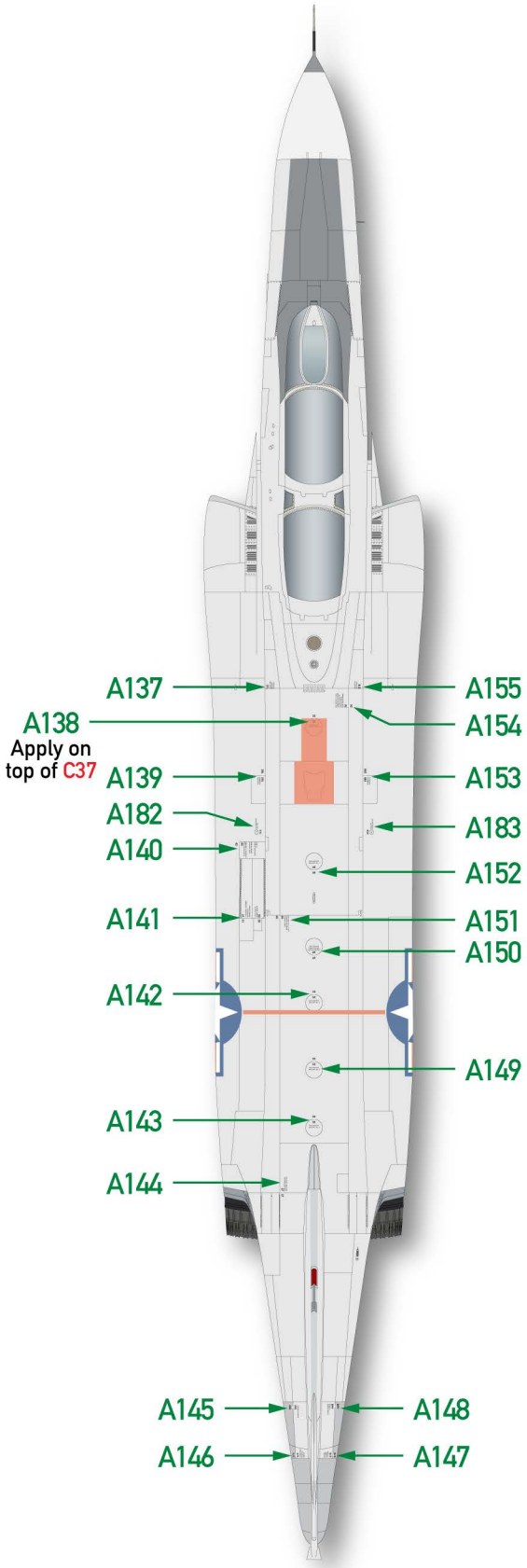
McDonnell RF-4C (Early)

Access Door Markings

Upper Fuselage



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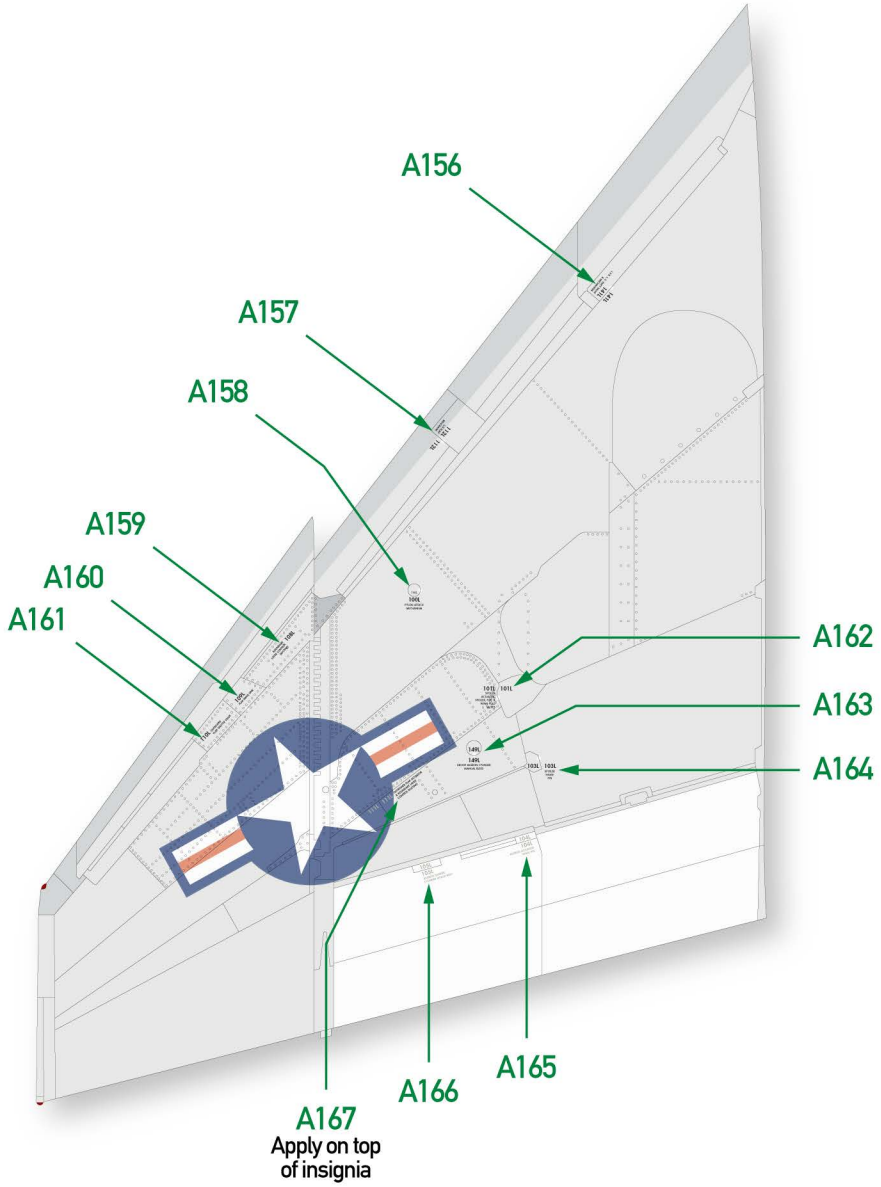
McDonnell RF-4C (Early)
Access Door Markings
Left Hand Upper Wing



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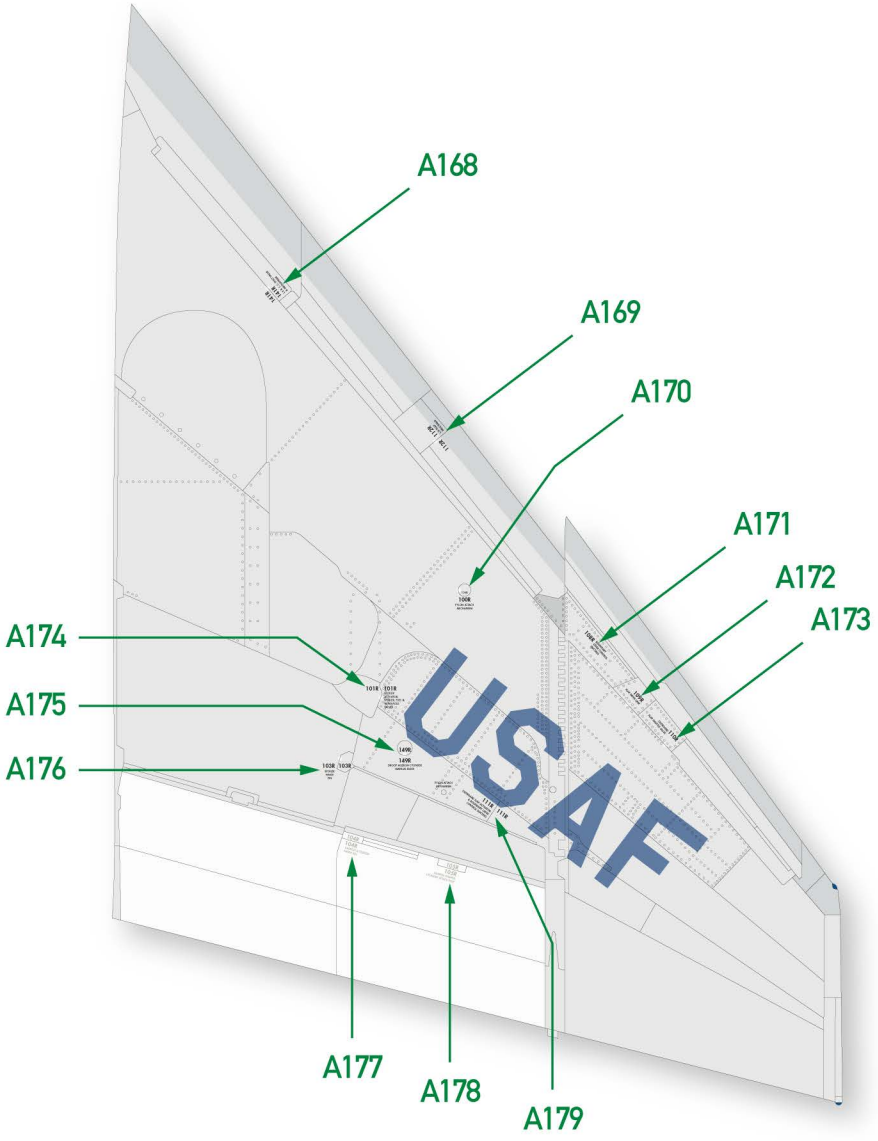
McDonnell RF-4C (Early)
Access Door Markings
Right Hand Upper Wing



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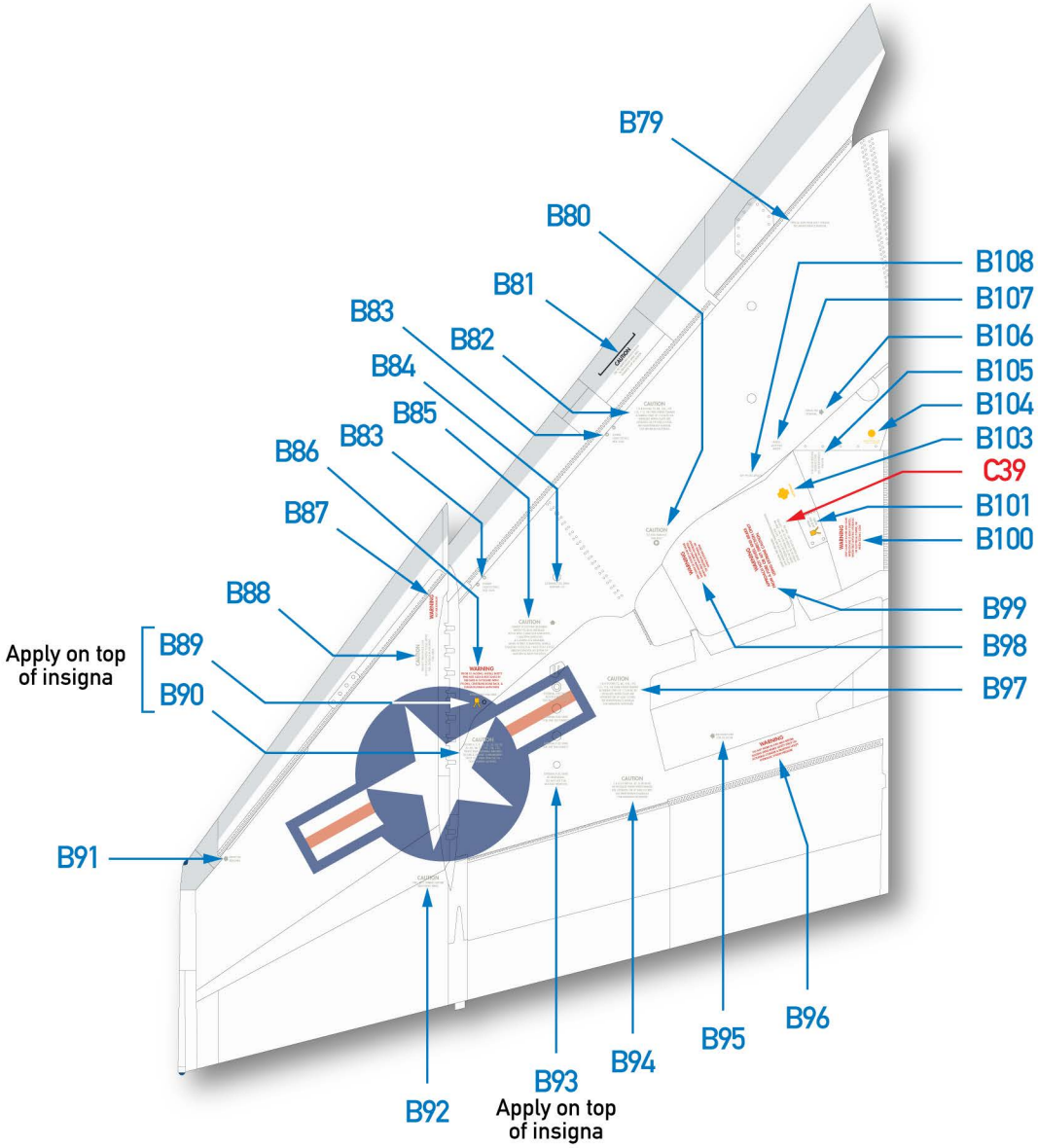
McDonnell RF-4C (Early)
Instructional Markings
Right Hand Lower Wing



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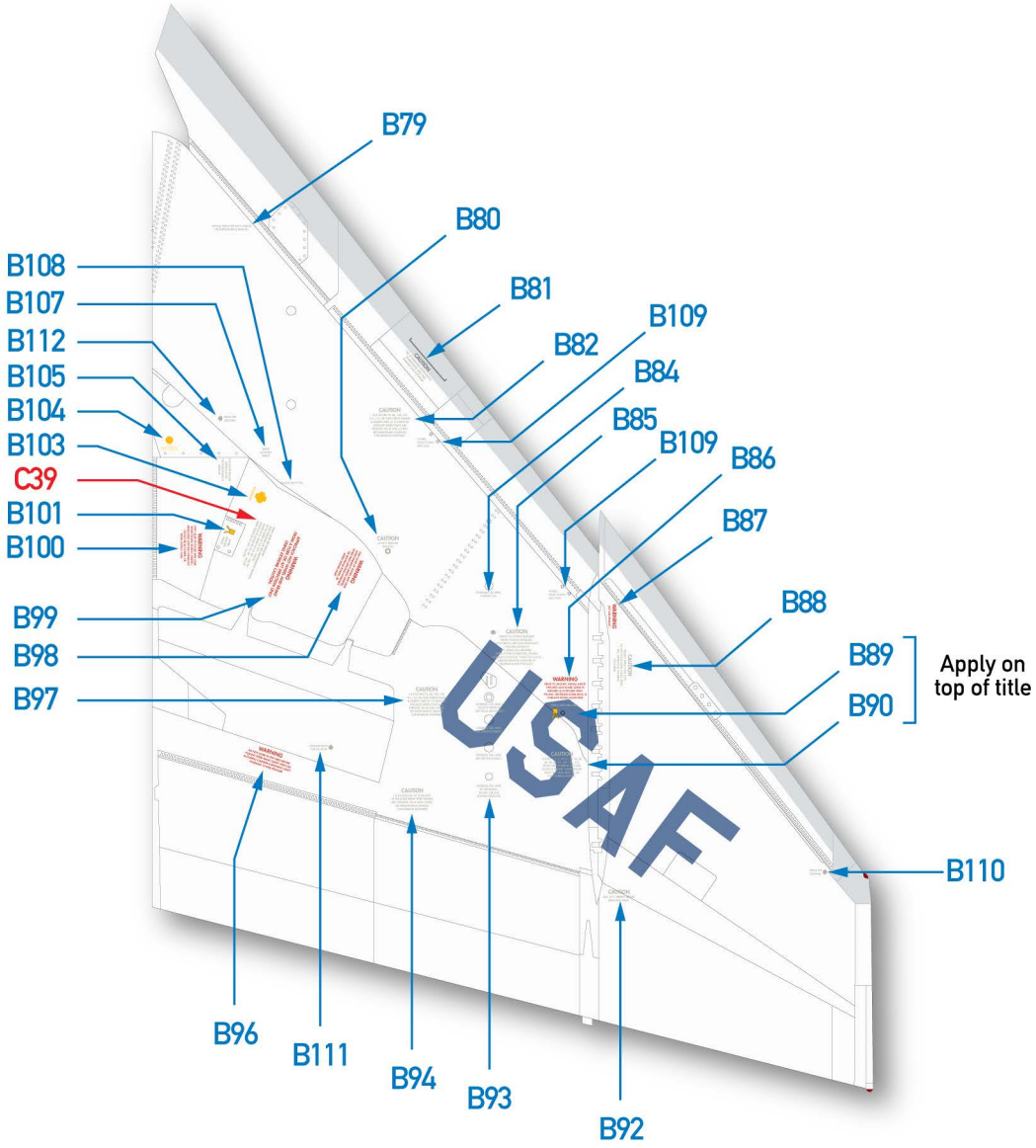
McDonnell RF-4C (Early)
Instructional Markings
Left Hand Lower Wing



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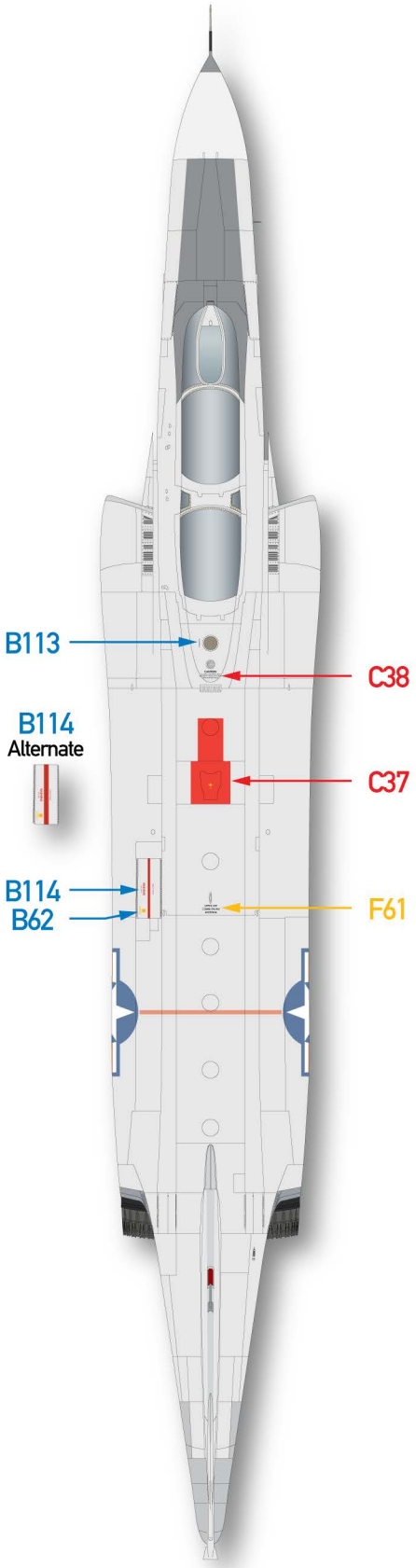
McDonnell RF-4C (Early)
Instructional Markings
Upper Fuselage



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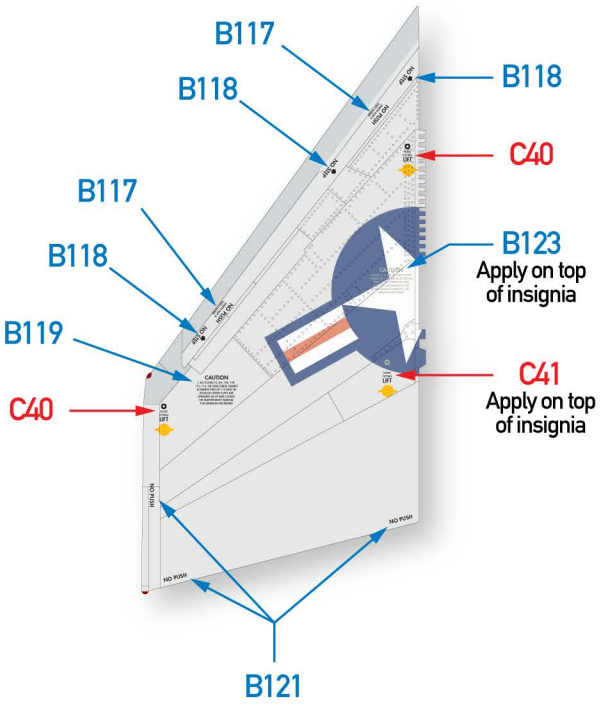
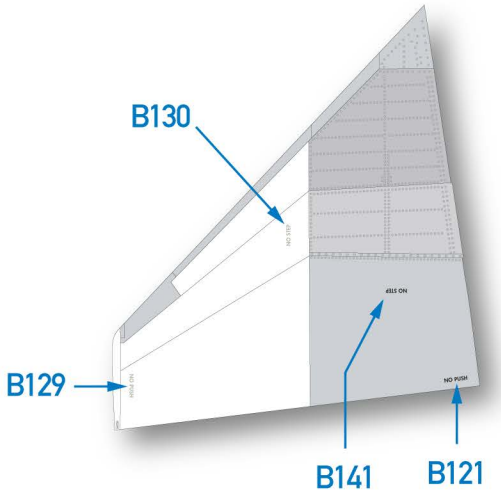
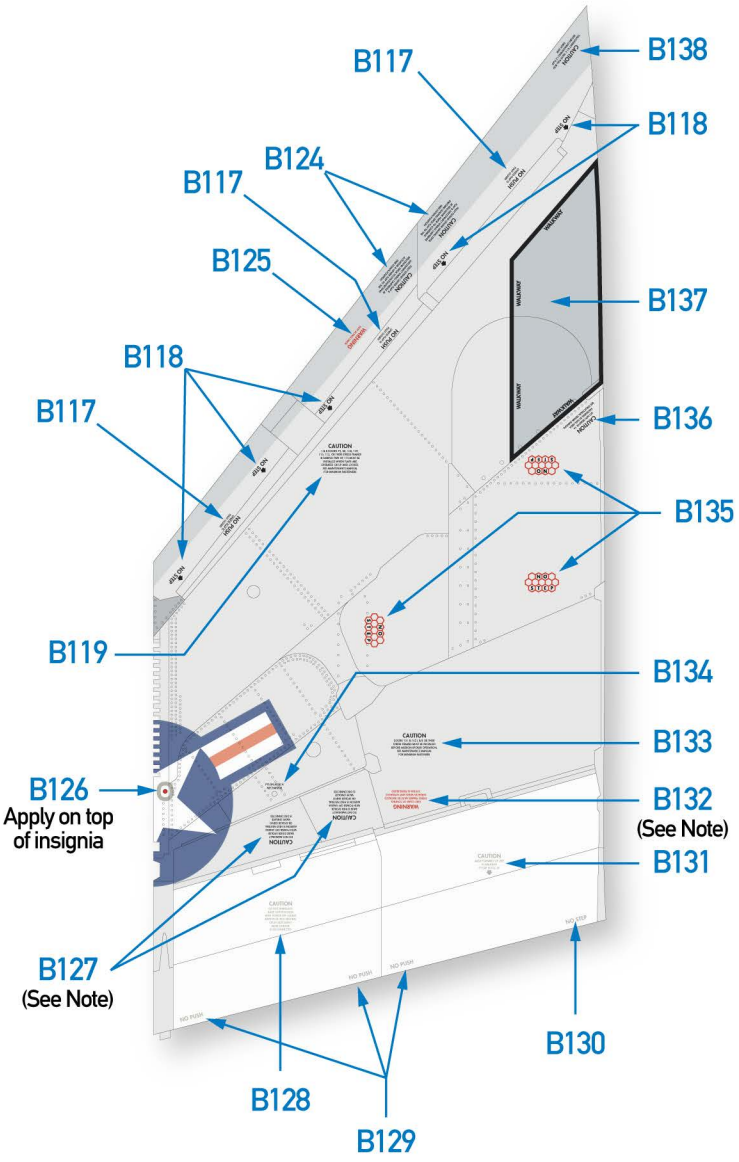
McDonnell RF-4C (Early)
Instructional Markings
Left Hand Upper Wing & Horizontal Stabilator







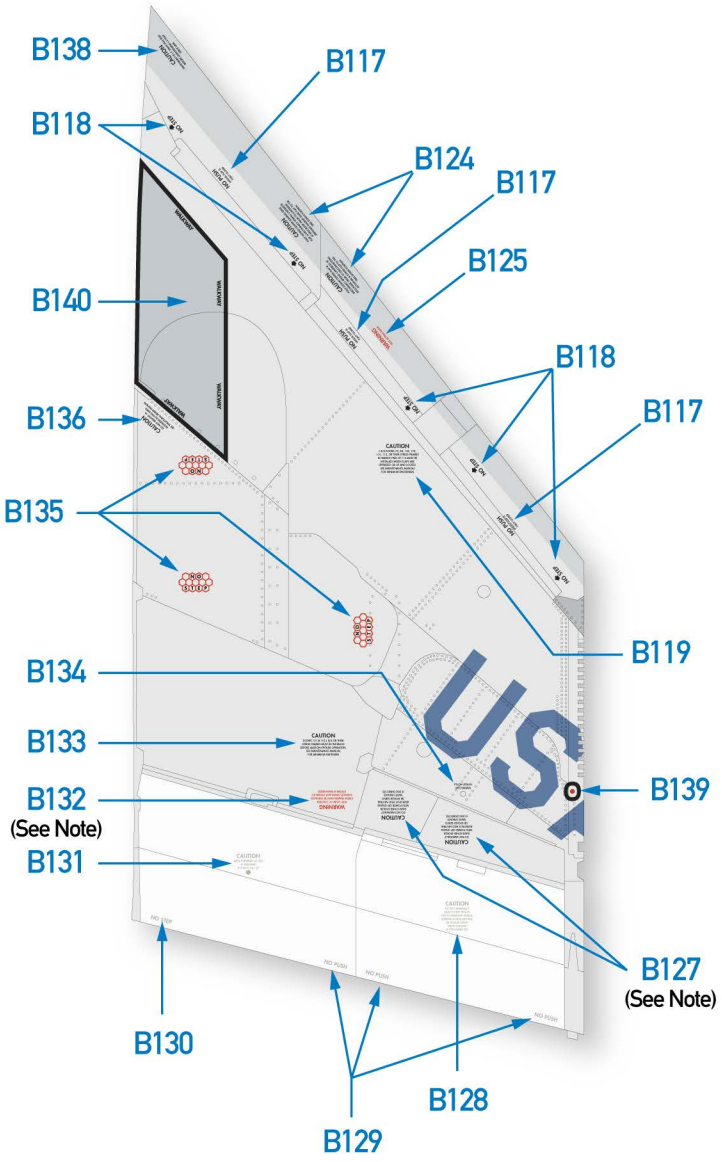
Note:

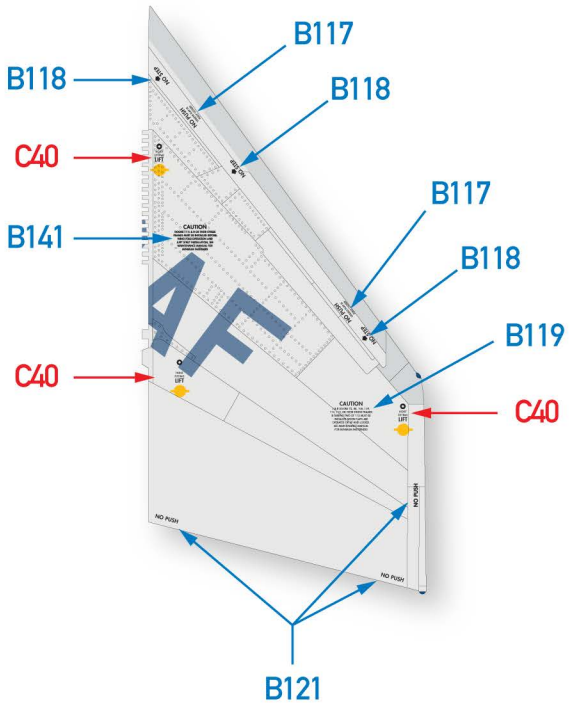
B127/B132: Note the orientation of these items. Tops of letters face the trailing edge of the wing.

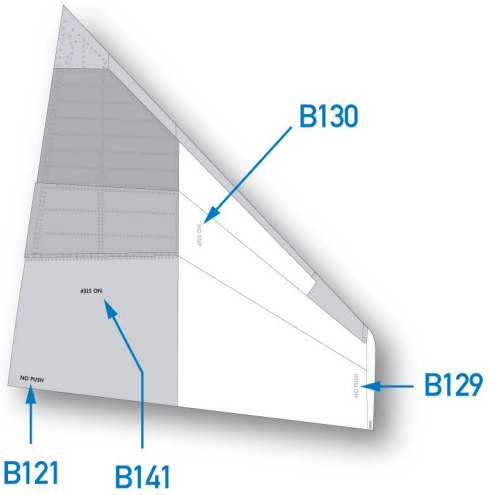
McDonnell RF-4C (Early)

Instructional Markings

Right Hand Upper Wing & Horizontal Stabilator







Note:

B127/B132: Note the orientation of these items. Tops of letters face the trailing edge of the wing.

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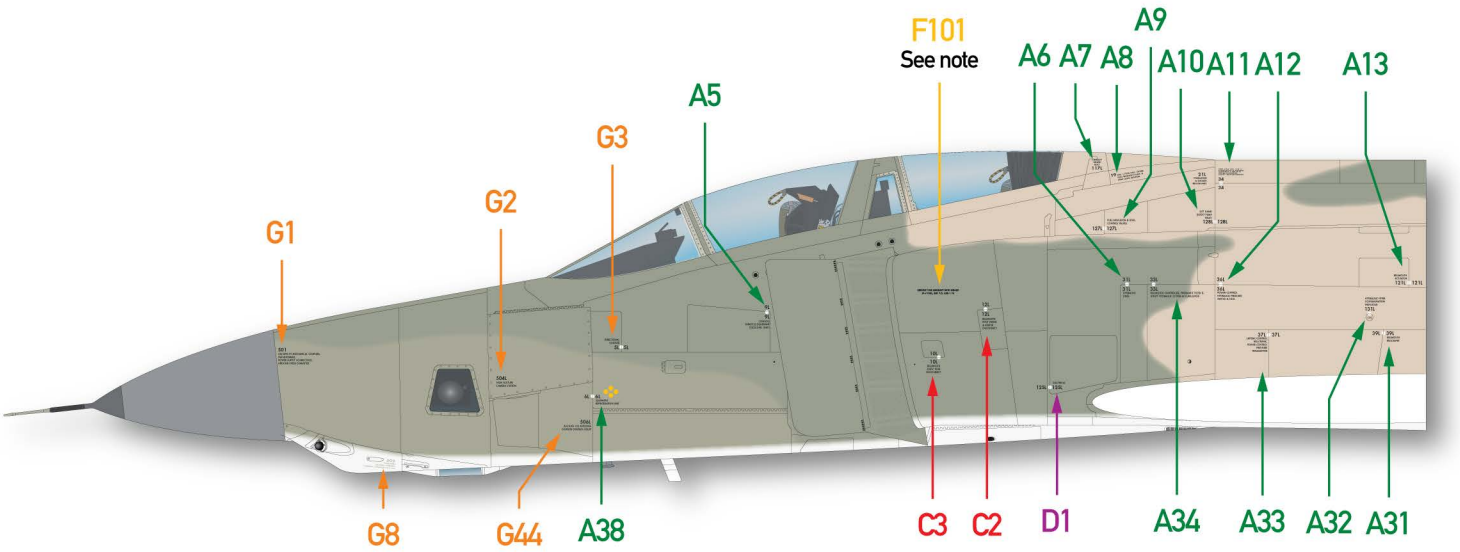
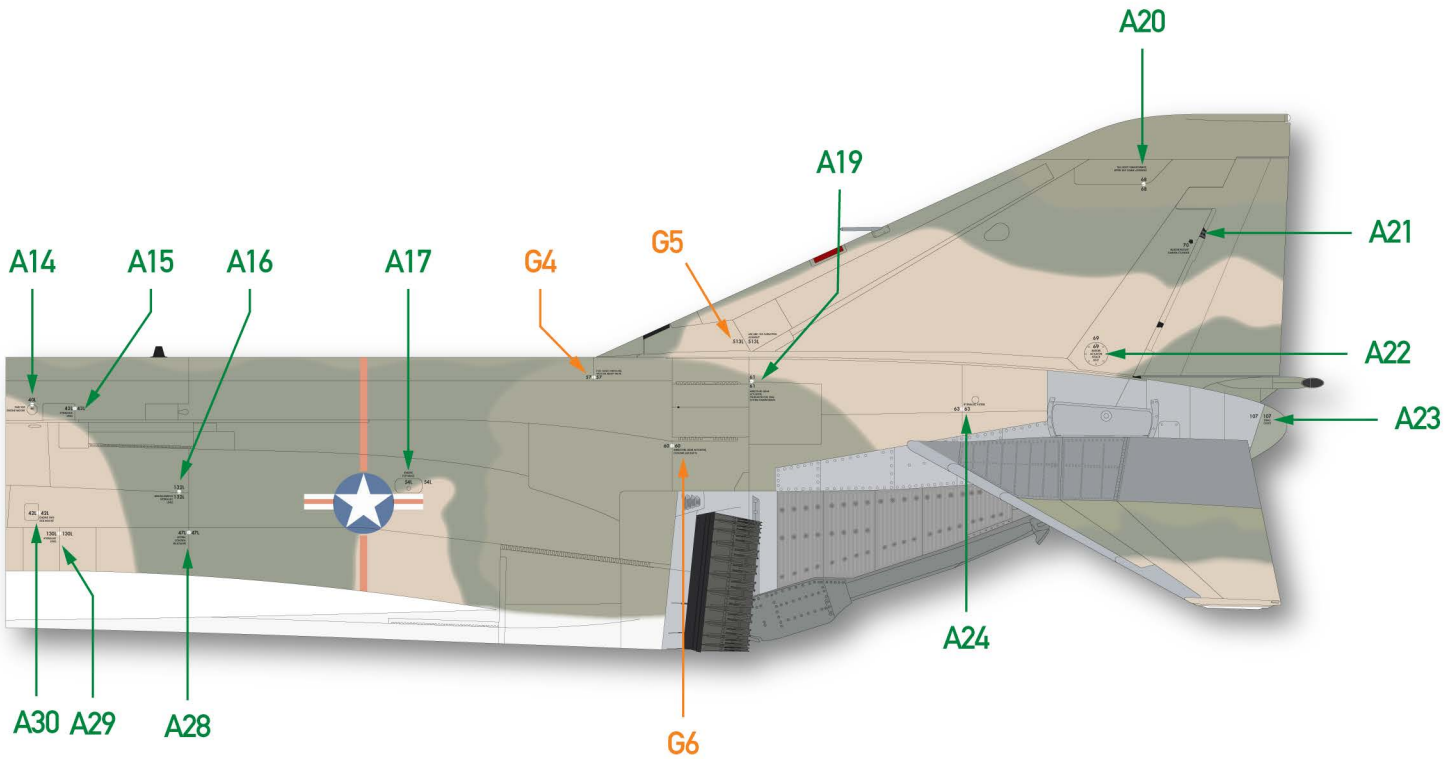
McDonnell Douglas RF-4C/E
Access Door Markings
Left Hand Fuselage





Notes:

Stencils applied to export RF-4Es (for customers other than the Bundesluftwaffe, which used bilingual stencils) were identical to US RF-4Cs, including those with unique camouflage schemes such as Iran and Israel. The only exception was the few late RF-4Es delivered with Ghost Gray camouflage, which are not covered here.

F101: This portion of the standard aircraft data block was applied on export aircraft. On USAF aircraft, there were two lines above it giving the production block number and USAF serial.

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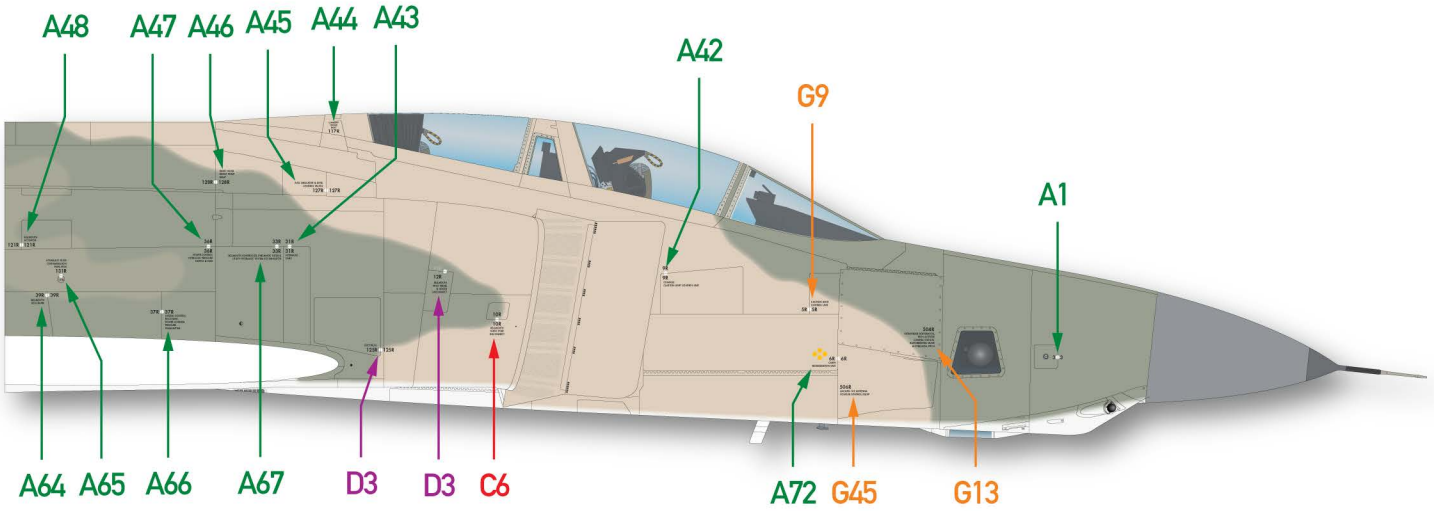
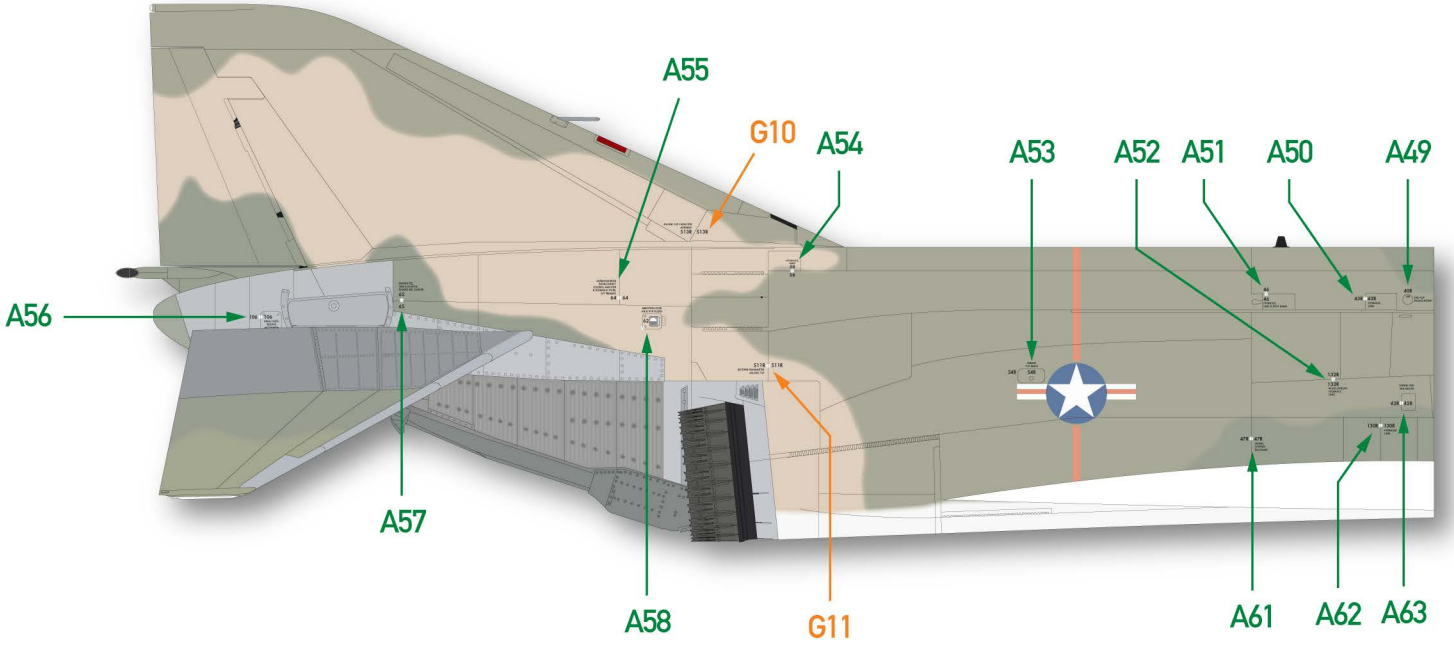
McDonnell Douglas RF-4C/E
Access Door Markings
Right Hand Fuselage





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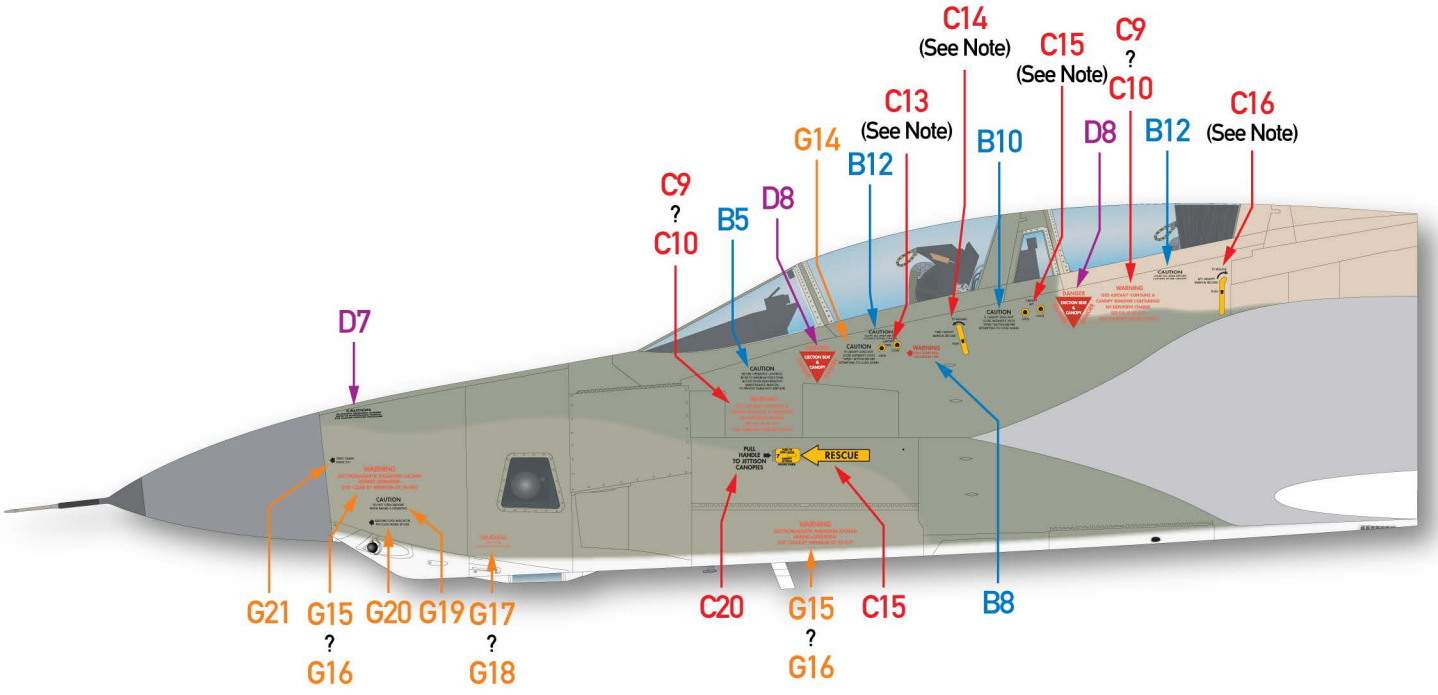
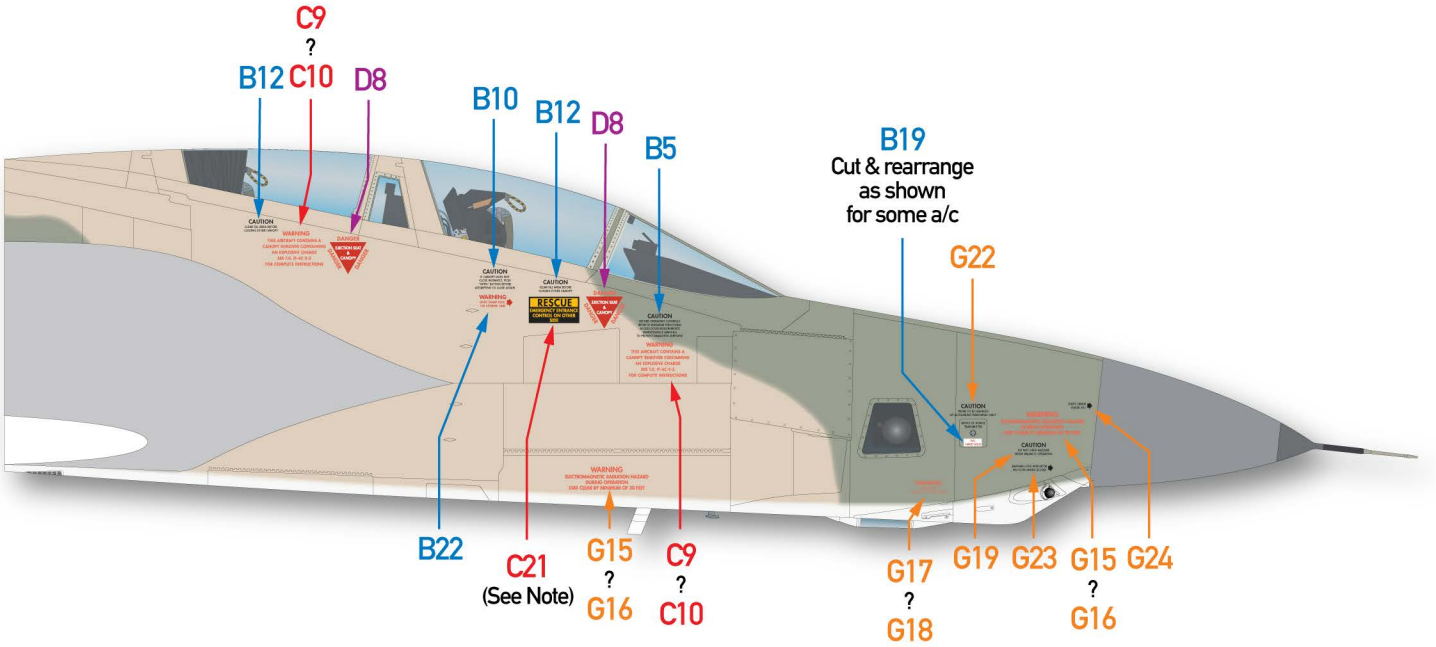
McDonnell Douglas RF-4C/E
Instructional Markings
Forward Fuselage





Notes:

C9/C10, G15/G16: The salmon colored stencils (C9/G15) were most commonly used, but the bright red versions (C10/G16) were also applied on some aircraft.

C13 - C16: Canopy open/close buttons & handles are provided to fit the ZM and Tamiya kit scribing (as closely as can make them), as well as in the actual scale size and shape based on tracings and measurements of these items on an actual F-4. The kit scribing (on every existing 1/48 F-4 kit we have found) is not really accurate in size or shape. We recommend filling the scribed detail and using the "B" versions of these decals, which are accurate scale representations of the real thing.

C21: Two variations are provided. The one shown in the drawing is by far the most common.

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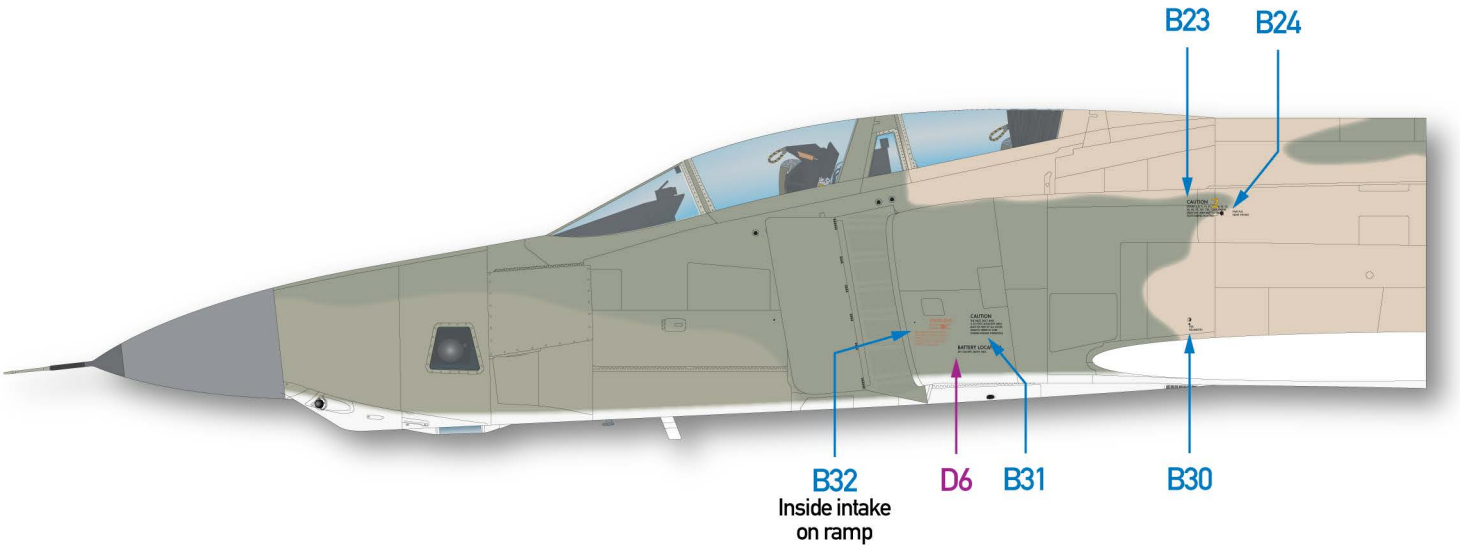
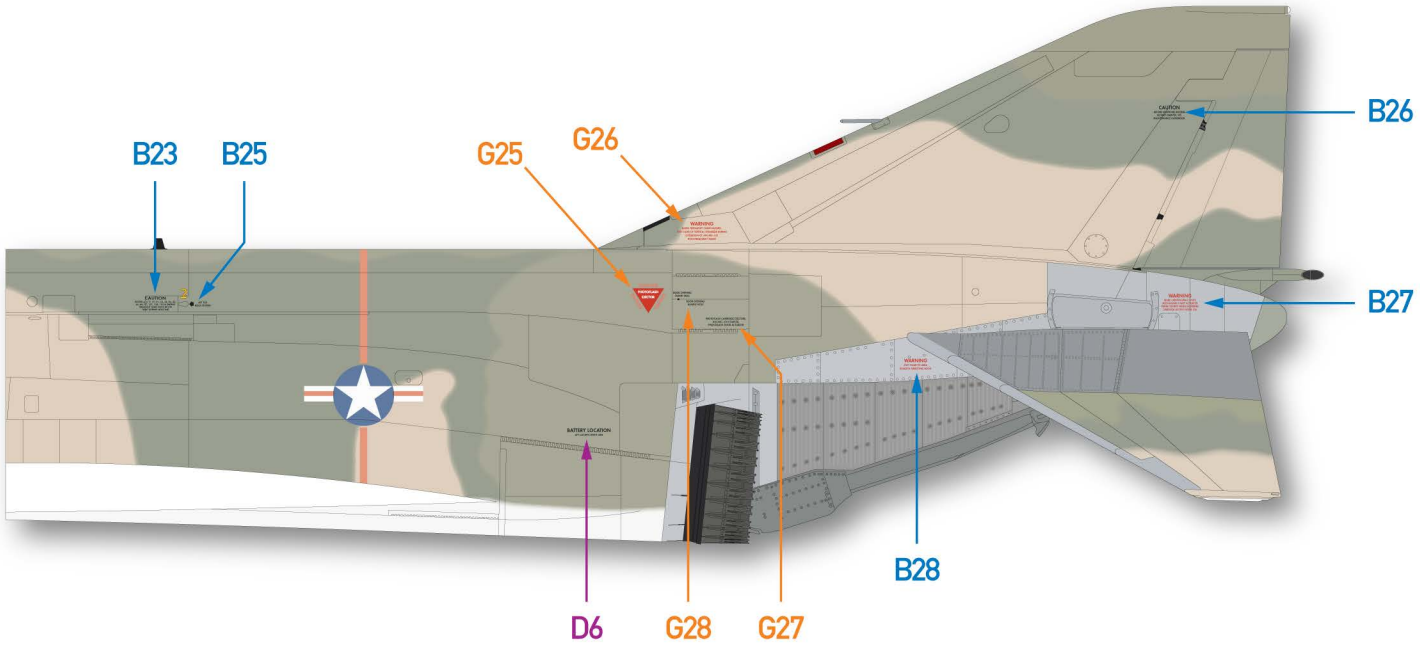
McDonnell Douglas RF-4C/E
Instructional Markings
Left Hand Fuselage





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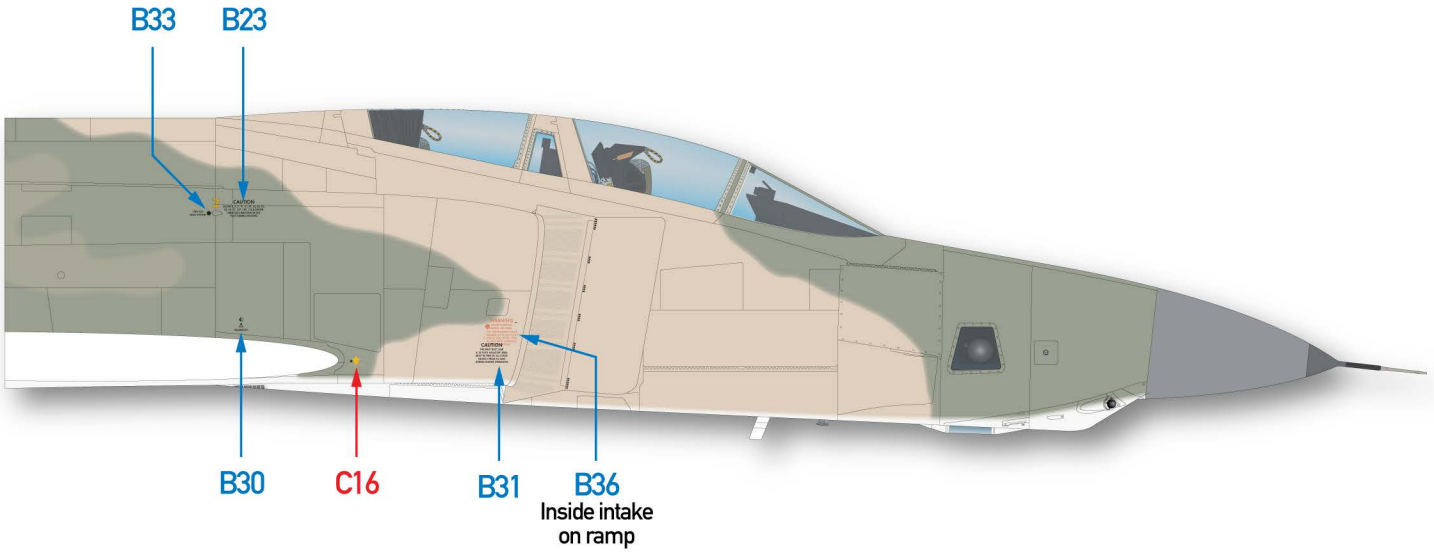
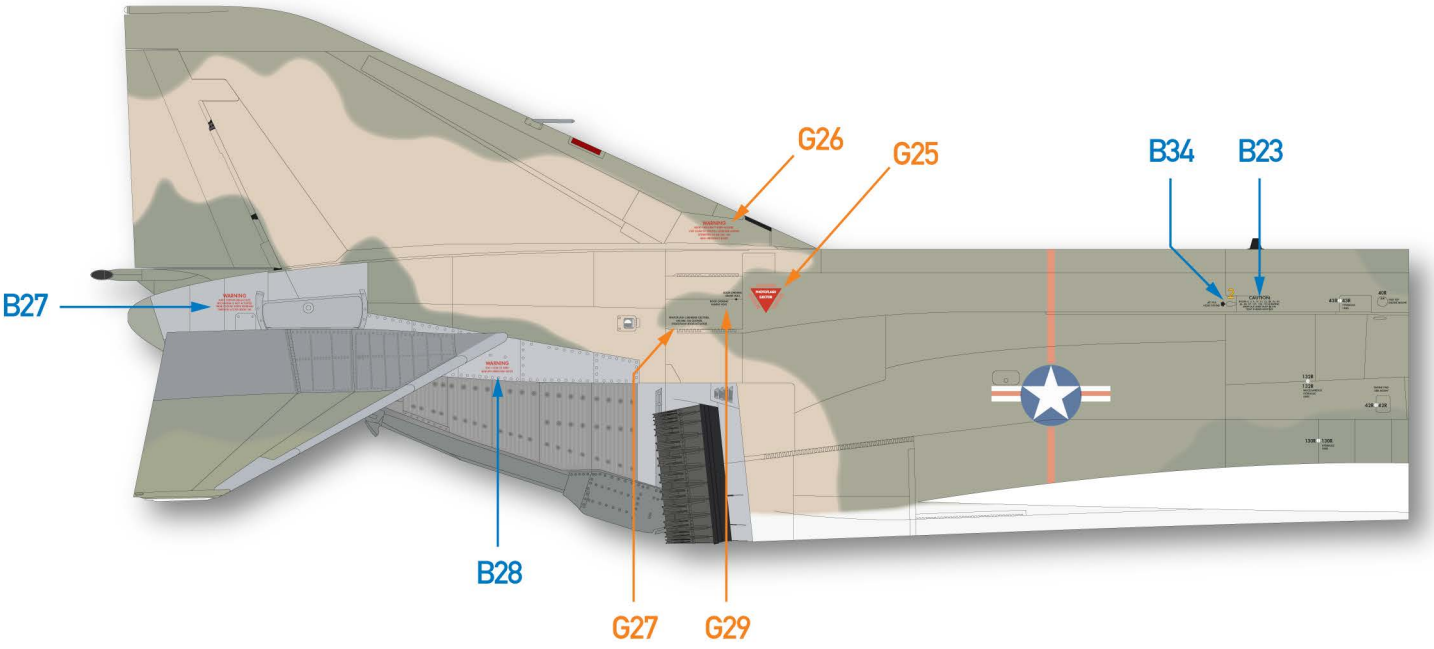
McDonnell Douglas RF-4C/E
Instructional Markings
Right Hand Fuselage





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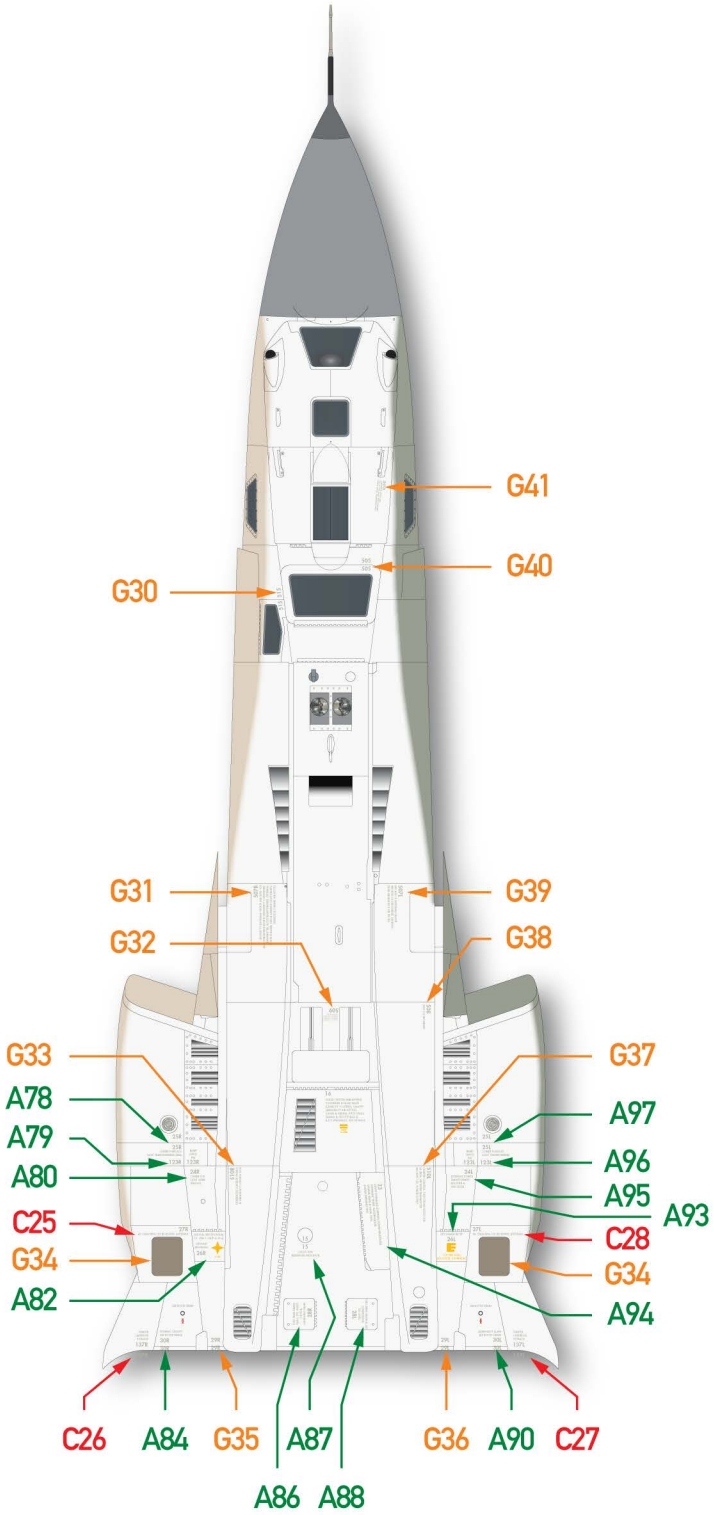
McDonnell Douglas RF-4C/E

Access Door Markings

Lower Forward Fuselage



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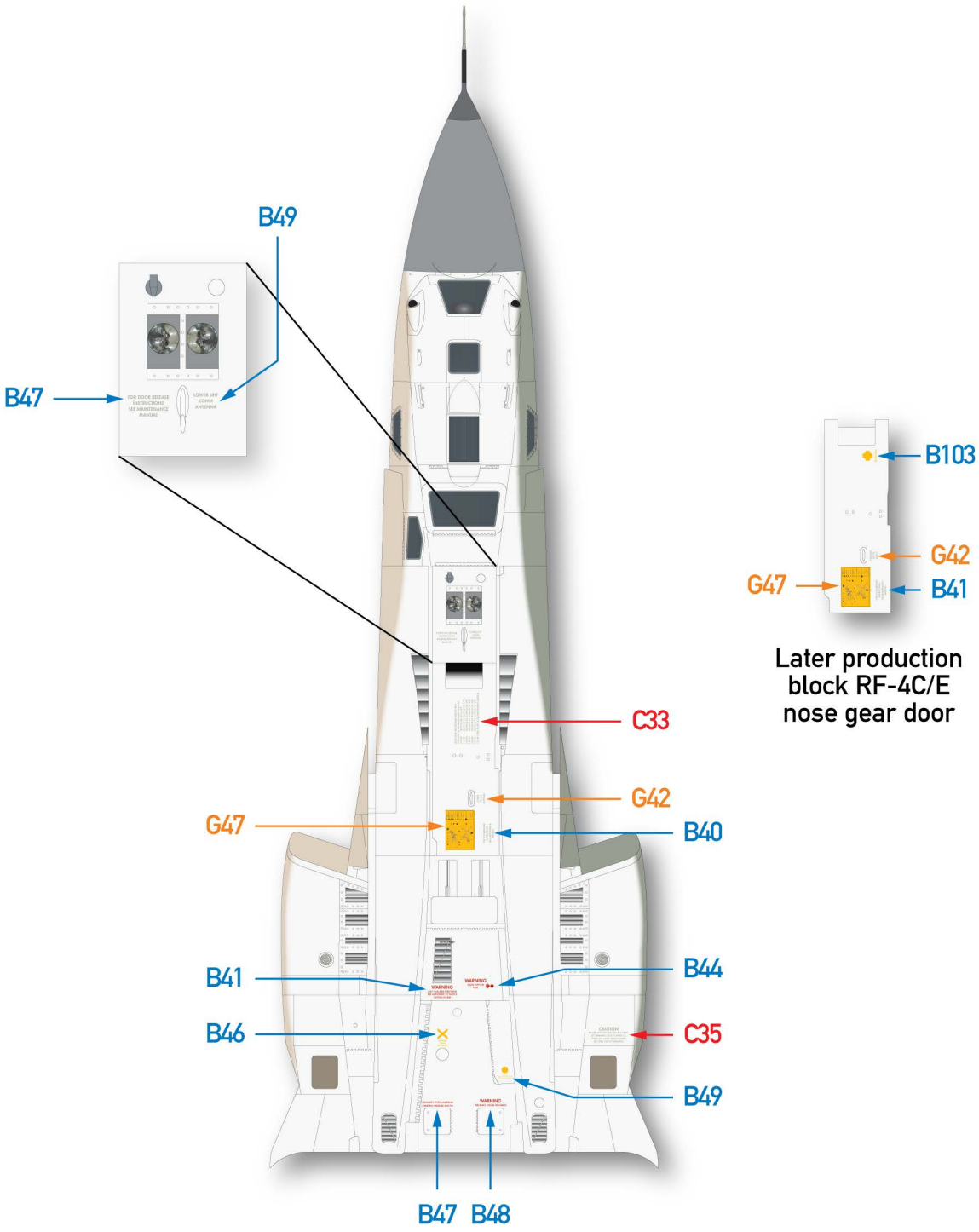
McDonnell Douglas RF-4C/E
Instructional Markings
Lower Forward Fuselage



Later production block RF-4C/E nose gear door

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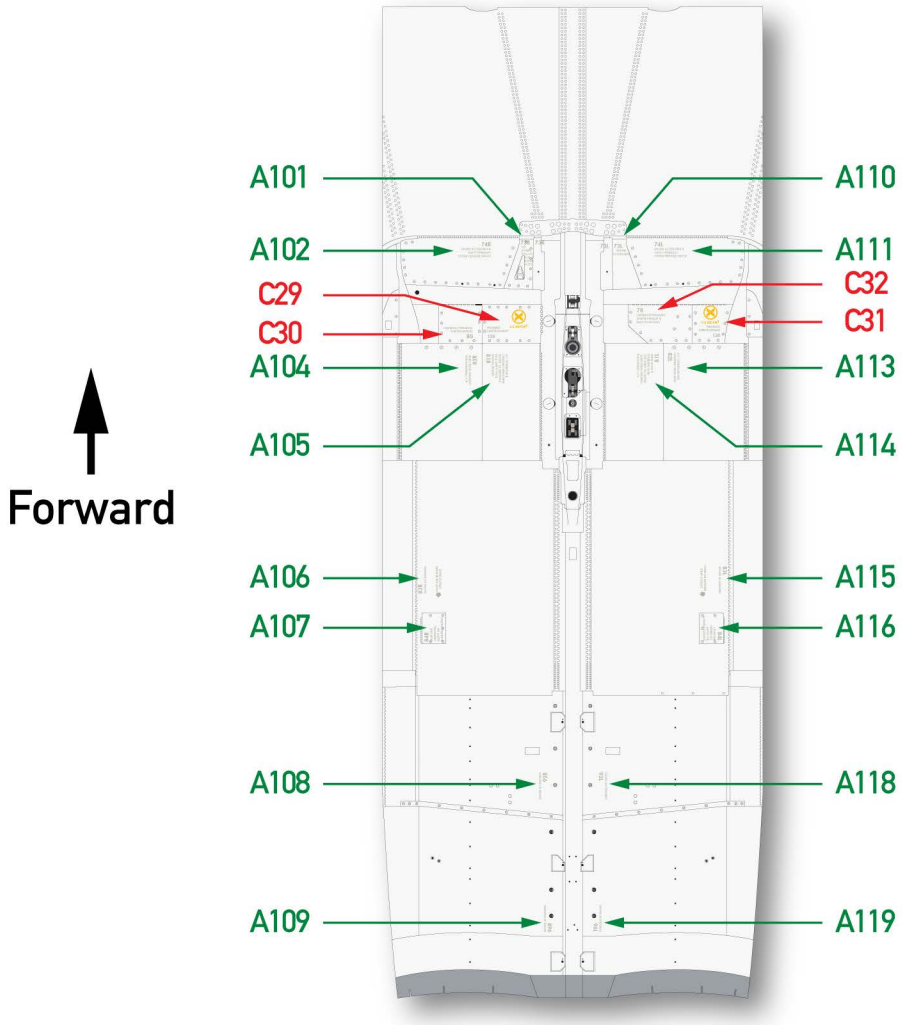
McDonnell Douglas RF-4C/E
Access Door Markings
Lower Aft Fuselage



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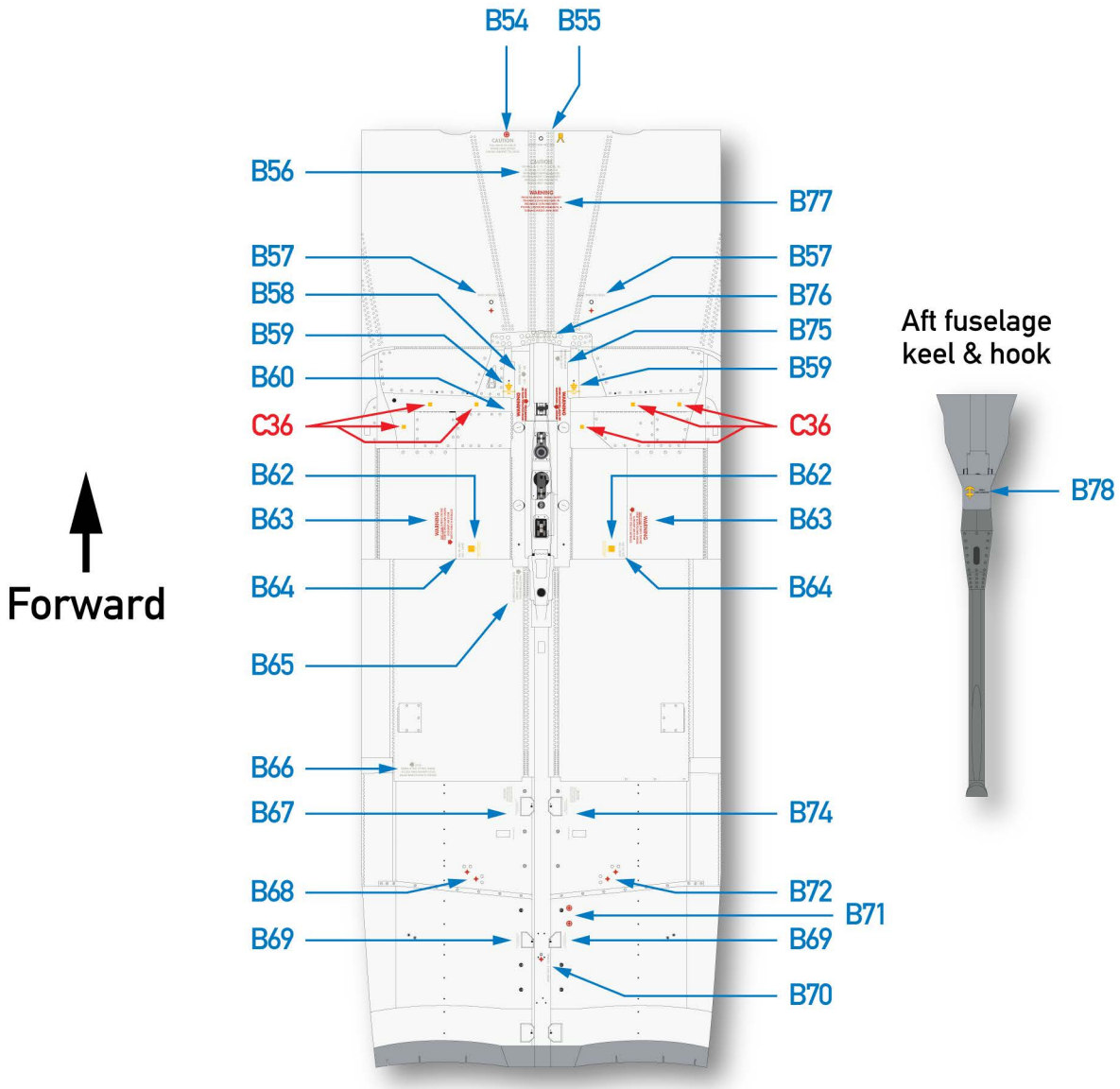
McDonnell Douglas RF-4C/E
Instructional Markings
Lower Aft Fuselage



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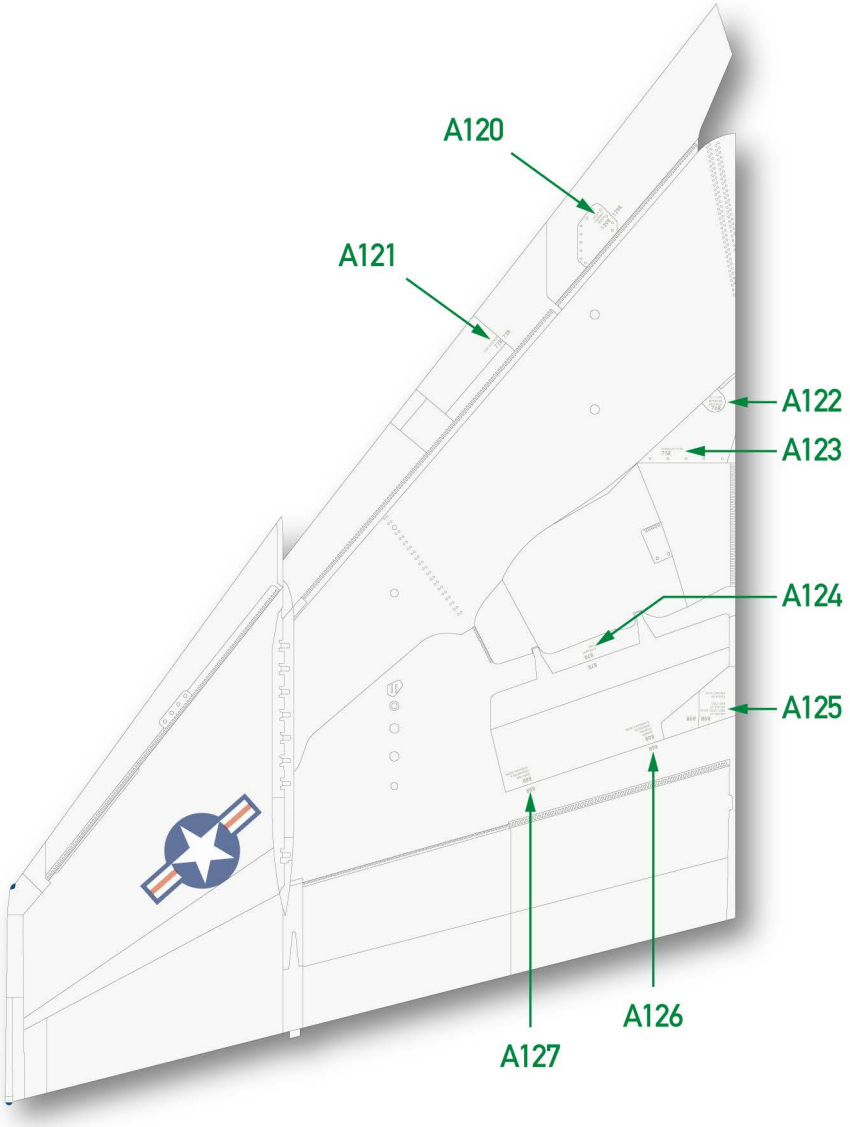
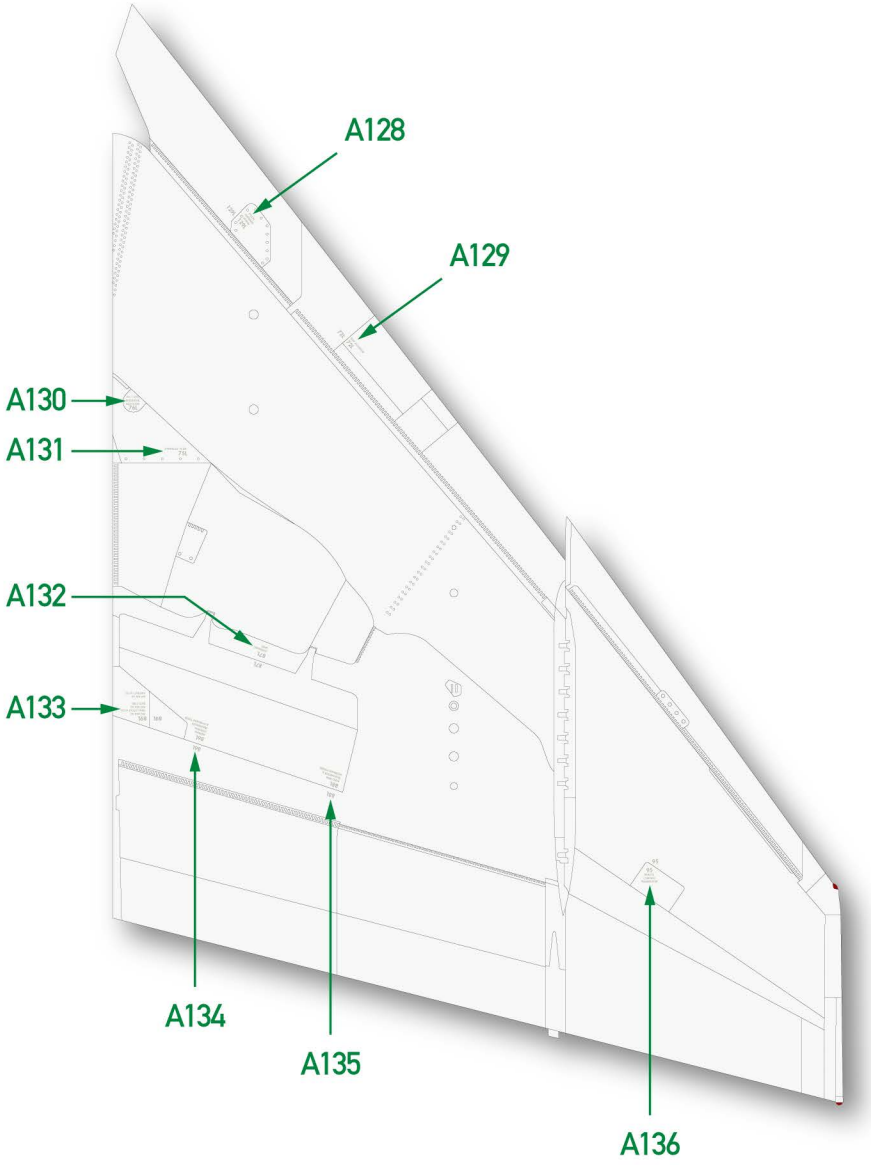
McDonnell Douglas RF-4C/E
Access Door Markings
Right Hand Lower Wing



McDonnell Douglas RF-4C/E

Access Door Markings
Left Hand Lower Wing



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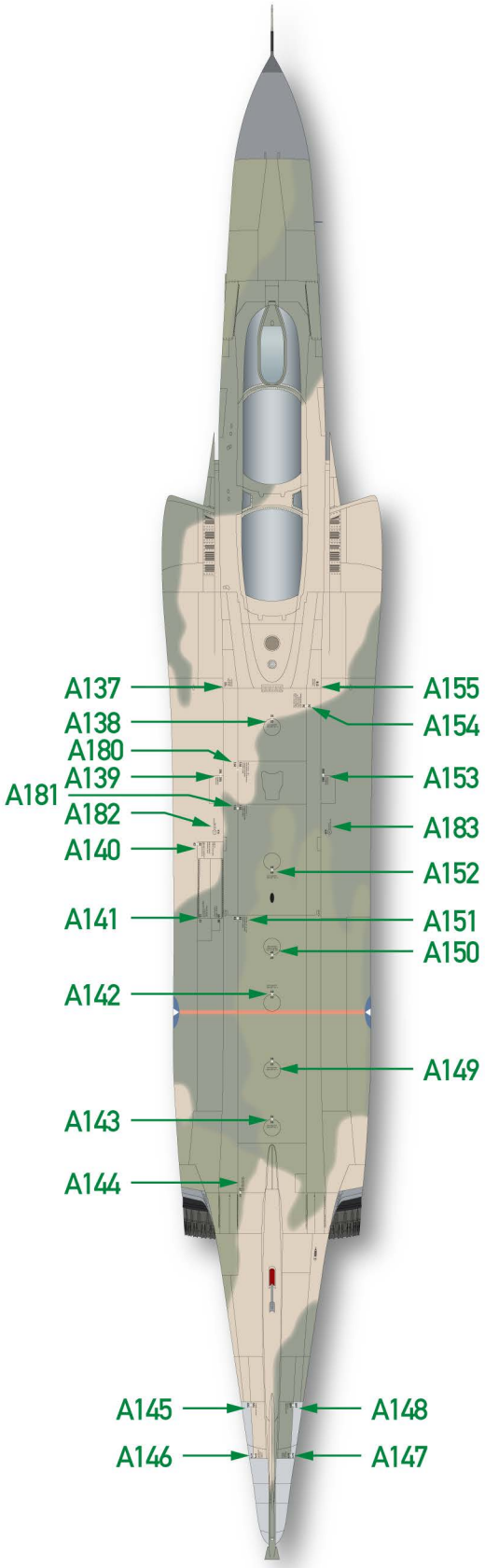
McDonnell Douglas RF-4C/E

Access Door Markings

Upper Fuselage



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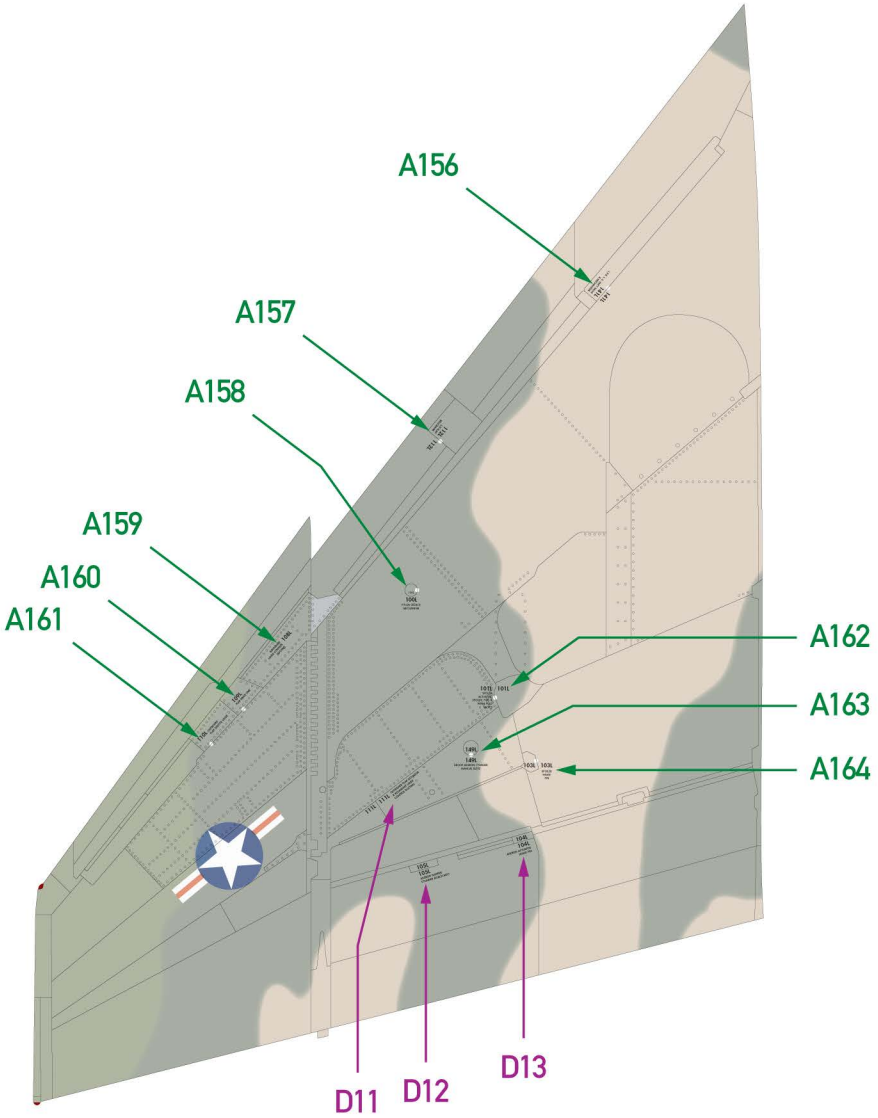
McDonnell Douglas RF-4C/E
Access Door Markings
Left Hand Upper Wing



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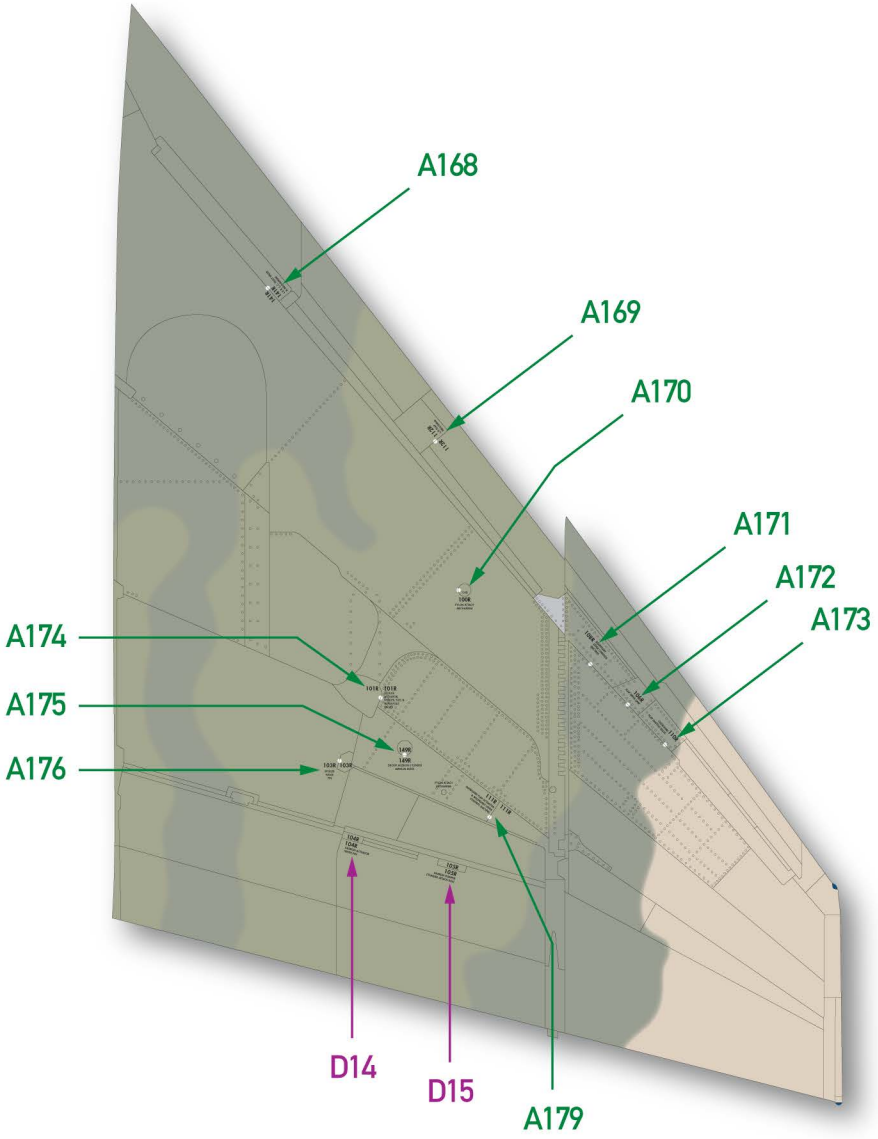
McDonnell Douglas RF-4C/E
Access Door Markings
Right Hand Upper Wing



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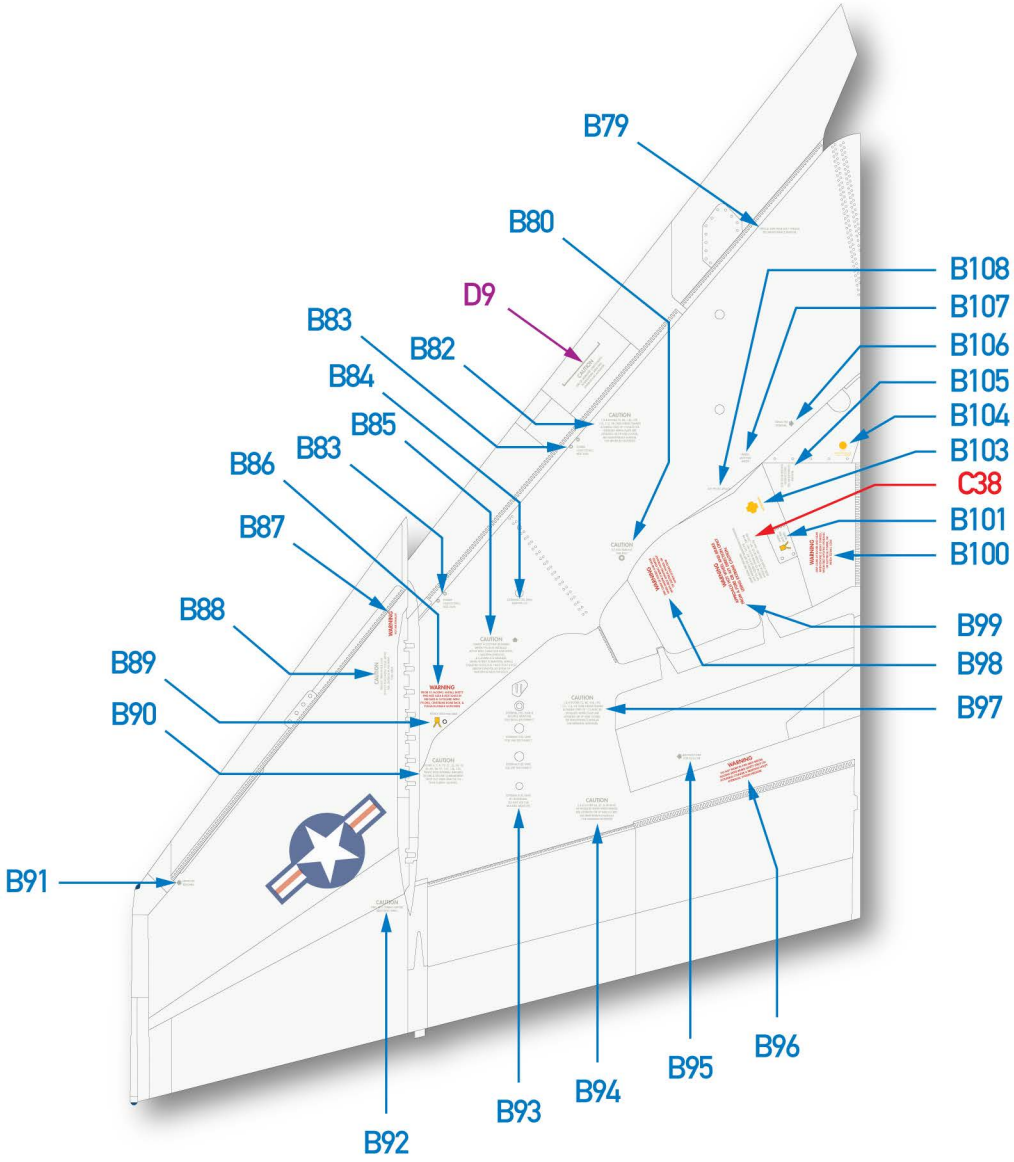
McDonnell Douglas RF-4C/E
Instructional Markings
Right Hand Lower Wing



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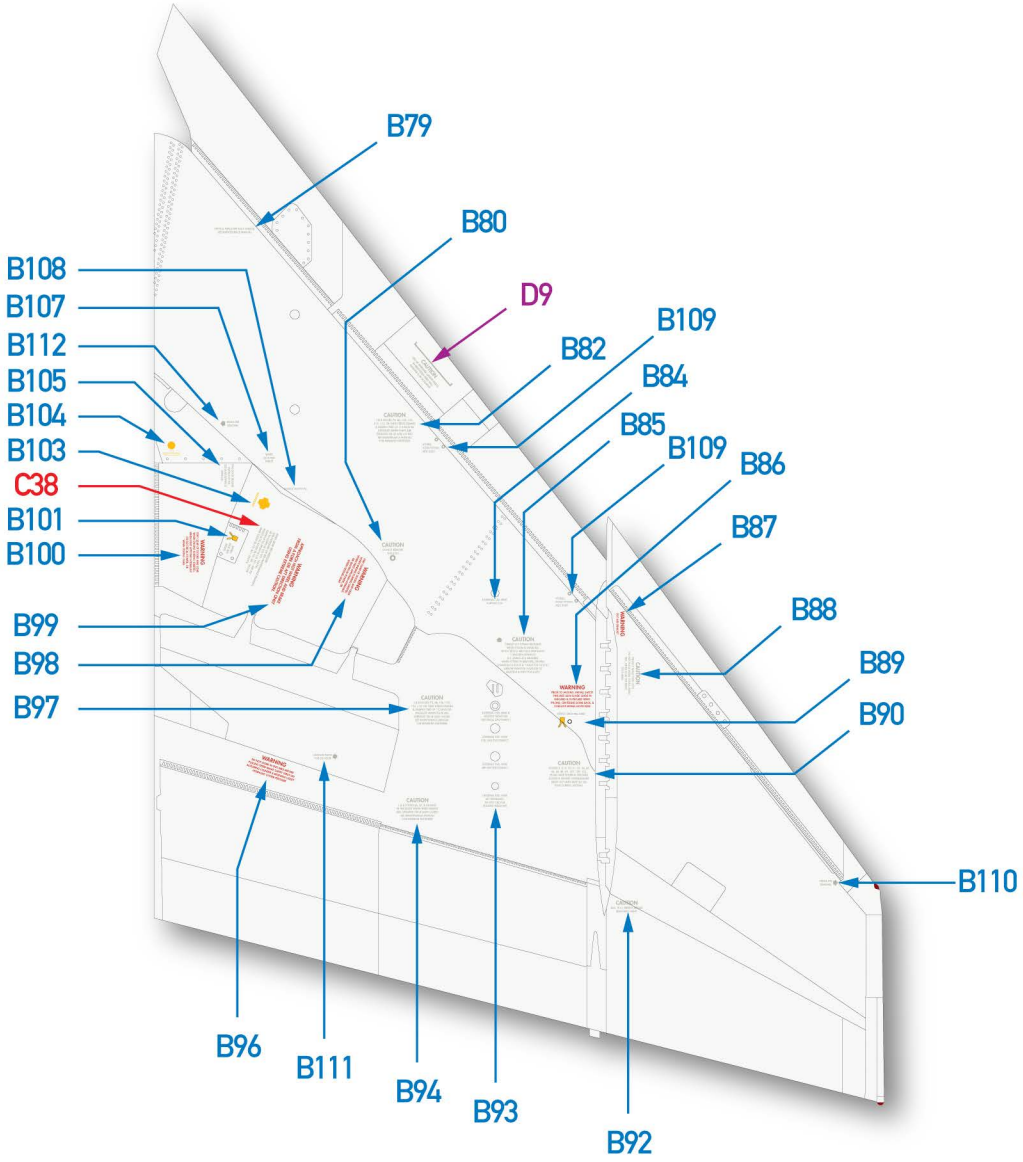
McDonnell Douglas RF-4C/E
Instructional Markings
Left Hand Lower Wing



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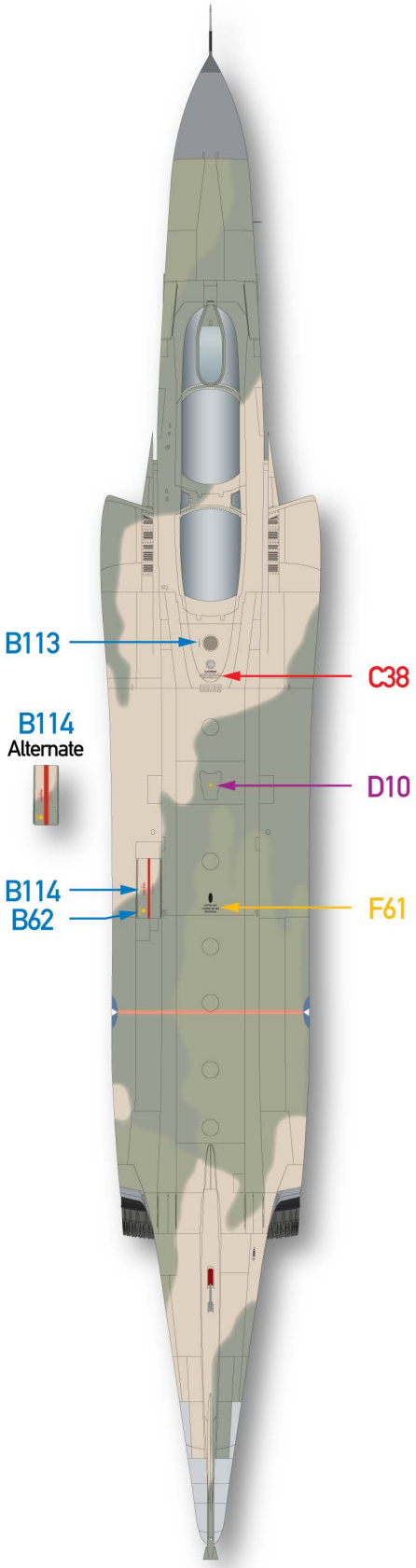
McDonnell Douglas RF-4C/E
Instructional Markings
Upper Fuselage



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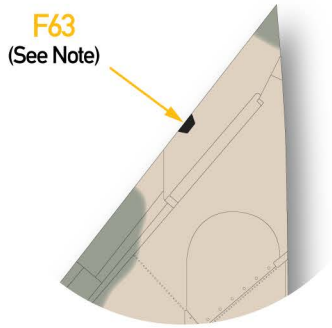
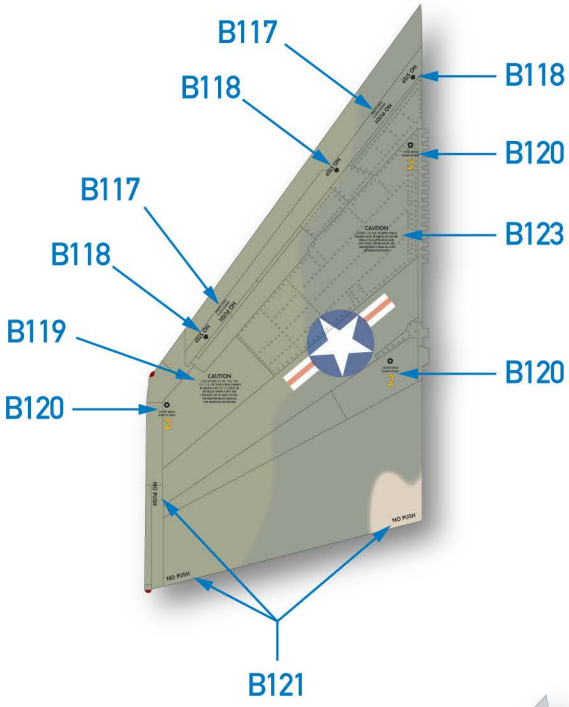
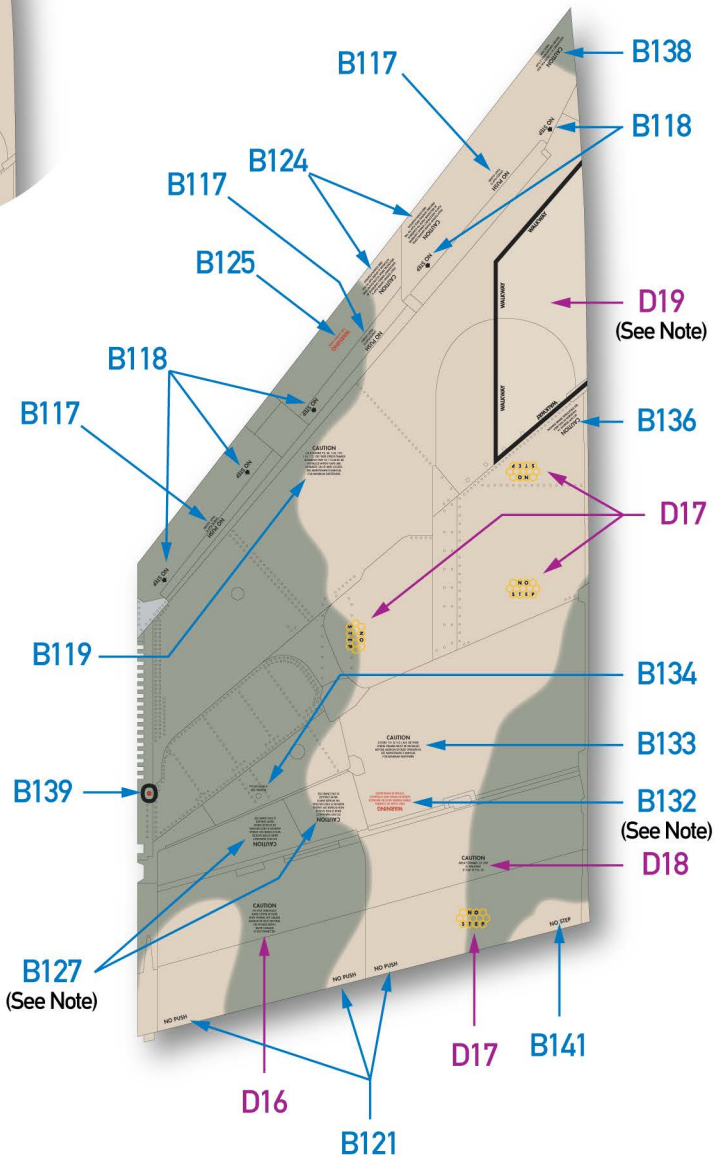
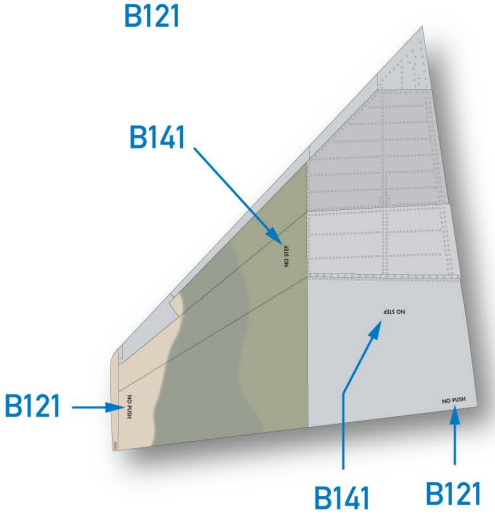
McDonnell Douglas RF-4C/E
Instructional Markings
Left Hand Upper Wing & Horizontal Stabilator









Notes:

D19/D20: When applied at the factory, the area inside the walkway outline was finished with tinted Corogard paint. In the few photos we have where you can clearly see this area on a factory finished aircraft, the left hand (tan) Corogard area appears to be slightly lighter in tone than the surrounding camouflage color, while the right hand one (green) appears darker. Of course it quickly became dirty with grime and boot marks.

B127/B132: Note the orientation of these items. Tops of letters face the trailing edge of the wing.

F63/F64: Note orientation of these items. Only found on hard wing RF-4E. Check photos of your subject aircraft.

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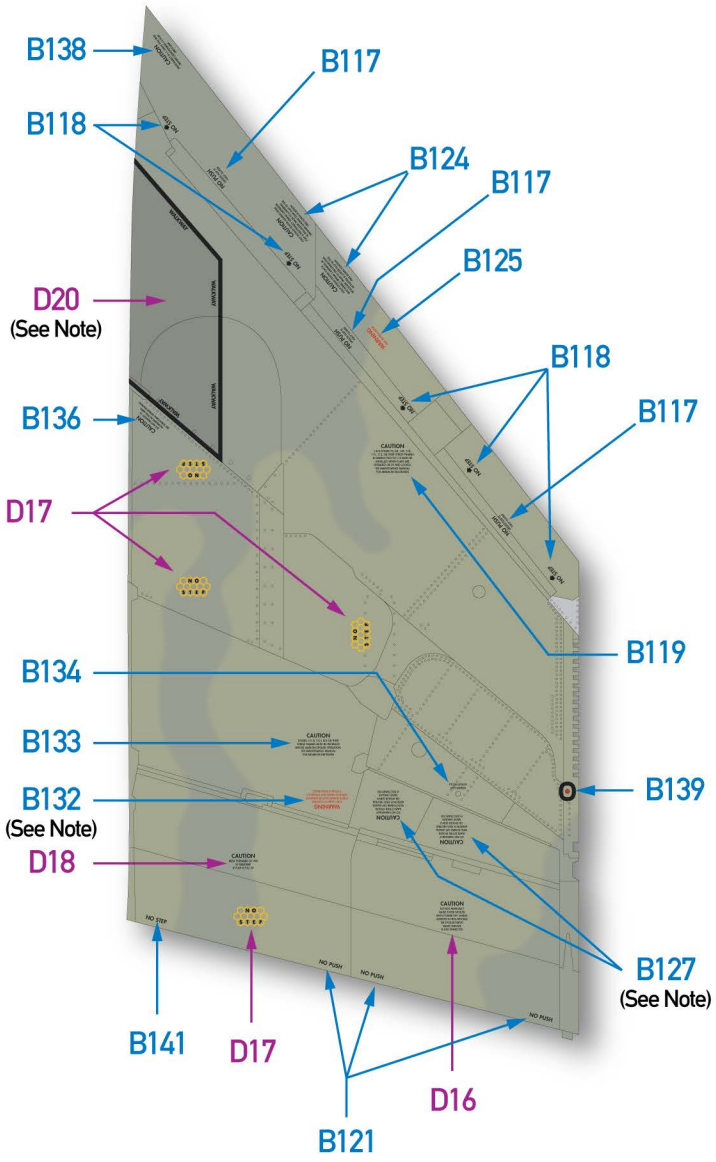
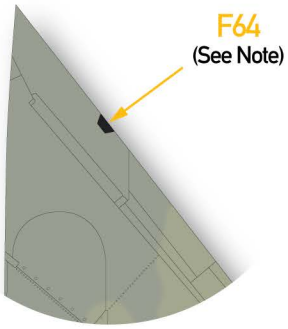
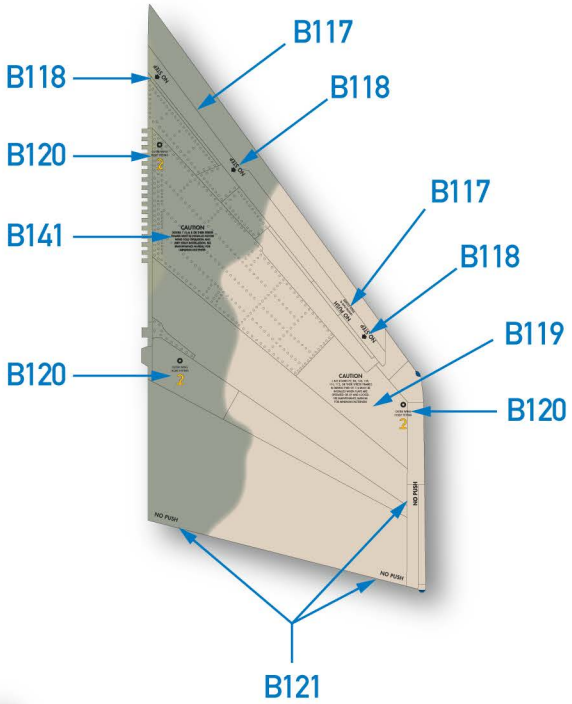
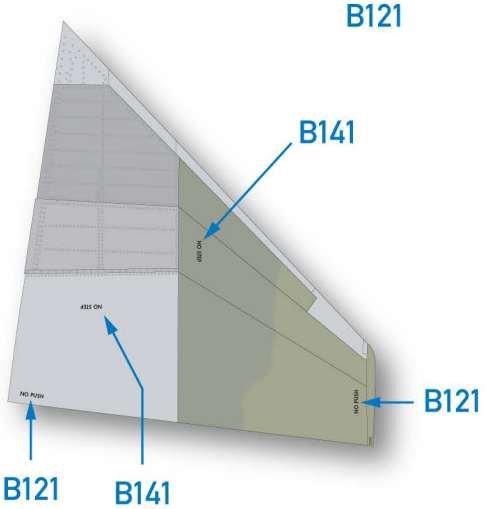
McDonnell Douglas RF-4C/E
Instructional Markings
Right Hand Upper Wing & Horizontal Stabilator









Notes:

D19/D20: When applied at the factory, the area inside the walkway outline was finished with tinted Corogard paint. In the few photos we have where you can clearly see this area on a factory finished aircraft, the left hand (tan) Corogard area appears to be slightly lighter in tone than the surrounding camouflage color, while the right hand one (green) appears darker. Of course it quickly became dirty with grime and boot marks.

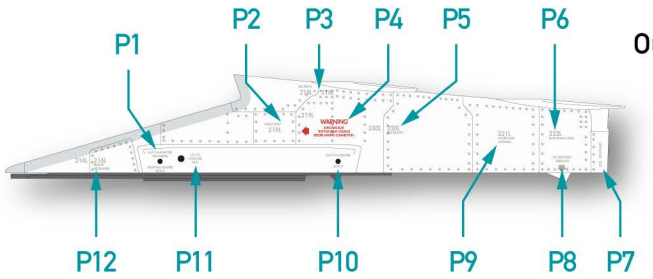
B127/B132: Note the orientation of these items. Tops of letters face the trailing edge of the wing.

F63/F64: Note orientation of these items. Only found on hard wing RF-4E. Check photos of your subject aircraft.

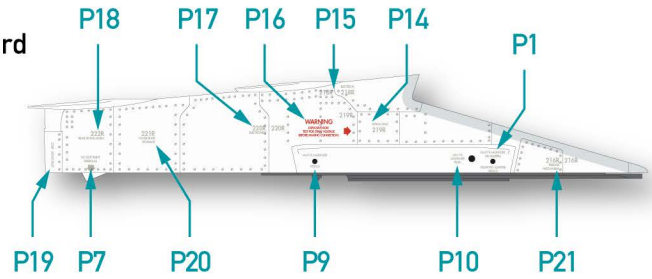
McDonnell Douglas F-4 Phantom
Stencil Data - Inboard Pylons

F-4B, Early F-4C, F-4J, RF-4B/C Inboard Pylons

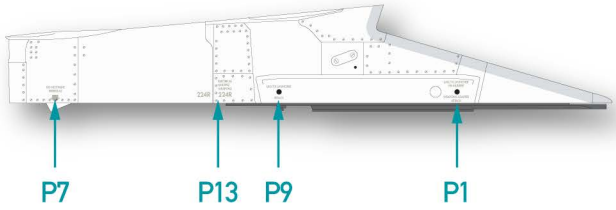
Left Inboard Pylon



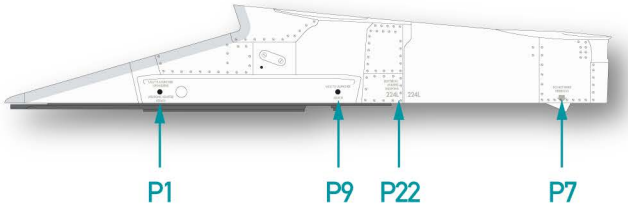
Right Inboard Pylon



Outboard side

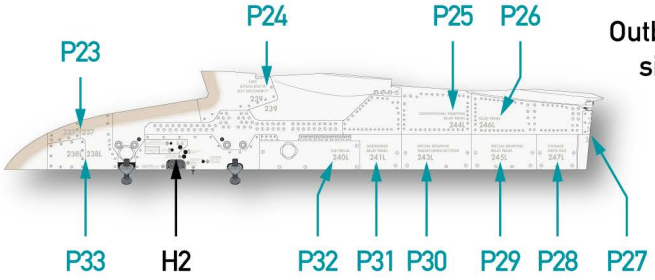


Inboard side

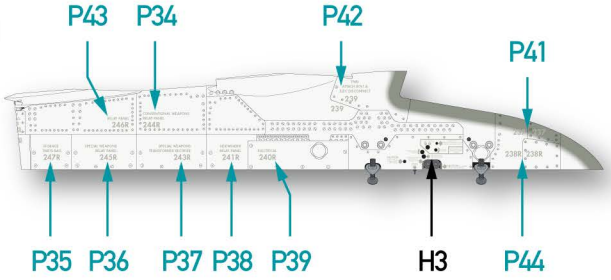


Late F-4C/D/E/RF-4E Inboard Pylons

Left Hand Pylon

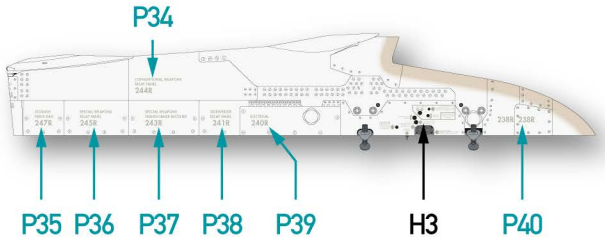


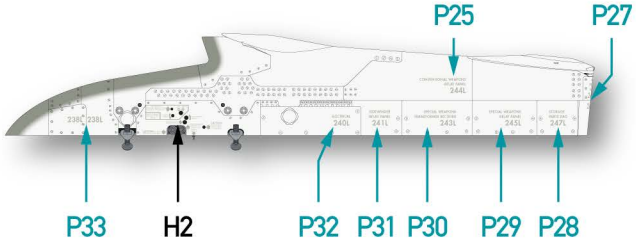
Right Hand Pylon



Outboard side

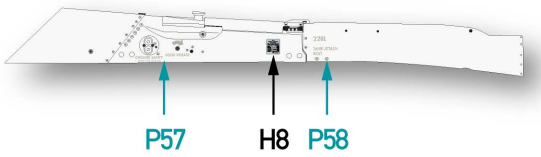
Inboard side



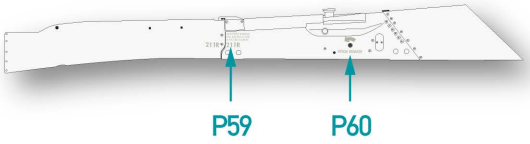


McDonnell Douglas F-4 Phantom
Stencil Data - Outboard Pylons

Sargent Fletcher 370 Gallon Wing Tank Pylons



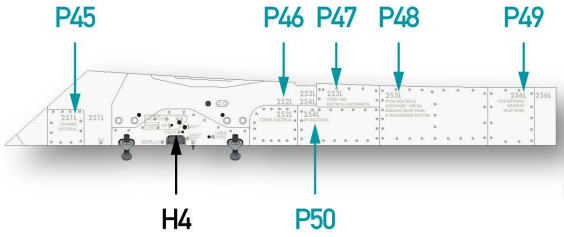
Left hand side



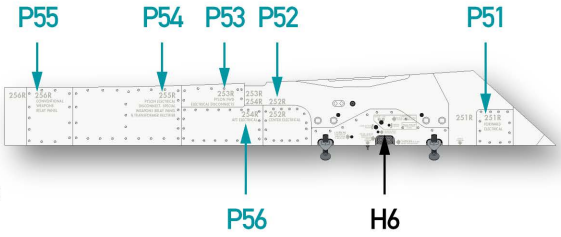
Right hand side

F-4C/D/E (USAF Type) Outboard Weapons Pylons

Left Hand Pylon

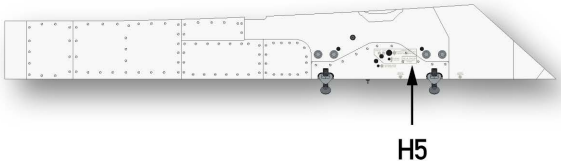


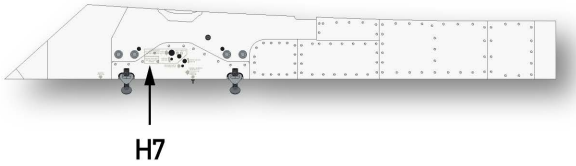
Right Hand Pylon



Outboard side

Inboard side





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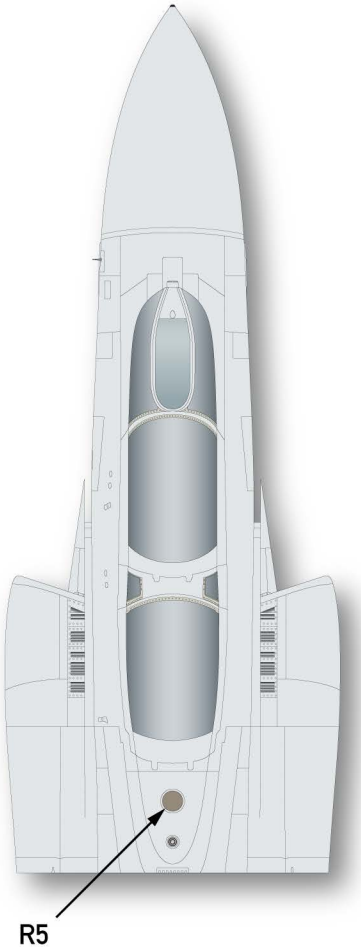
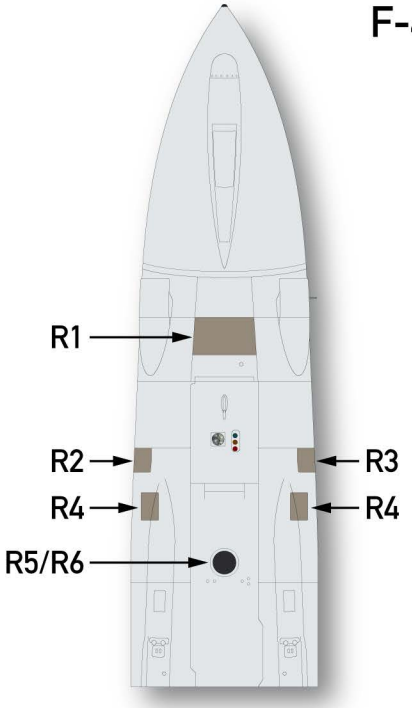
McDonnell Douglas F-4 Phantom

Dielectric Panels
Upper & Lower Fuselage

All F-4 Variants

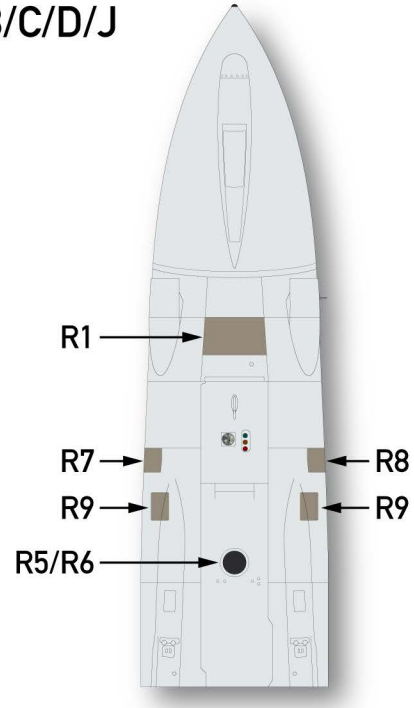


Tamiya

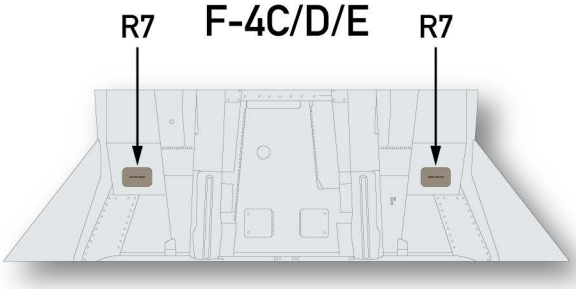


Zoukei-Mura

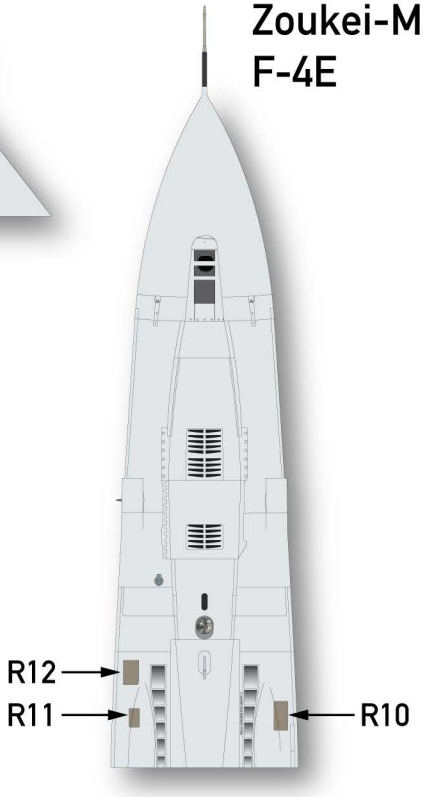
F-4B/C/D/J



F-4C/D/E



Zoukei-Mura F-4E



The F-4 family has a series of fiberglass dielectric panels at various places on the airframe. We have provided these as custom fit items for the Zoukei-Mura F-4C/D/J/S as well as for the Tamiya F-4B (and hopefully a future Tamiya F-4C/D and J!). You will notice the shapes are radically different on the ones under the nose for the B/C/D/J. Tamiya wins hands-down here, as theirs are almost perfect in shape and dimension compared to our tracings of the real thing. We recommend using decals R1-R6 on the ZM kit for better accuracy.

The round antenna panel on the nose gear doors of short nosed F-4s is generally very dark, so this is provided in black.

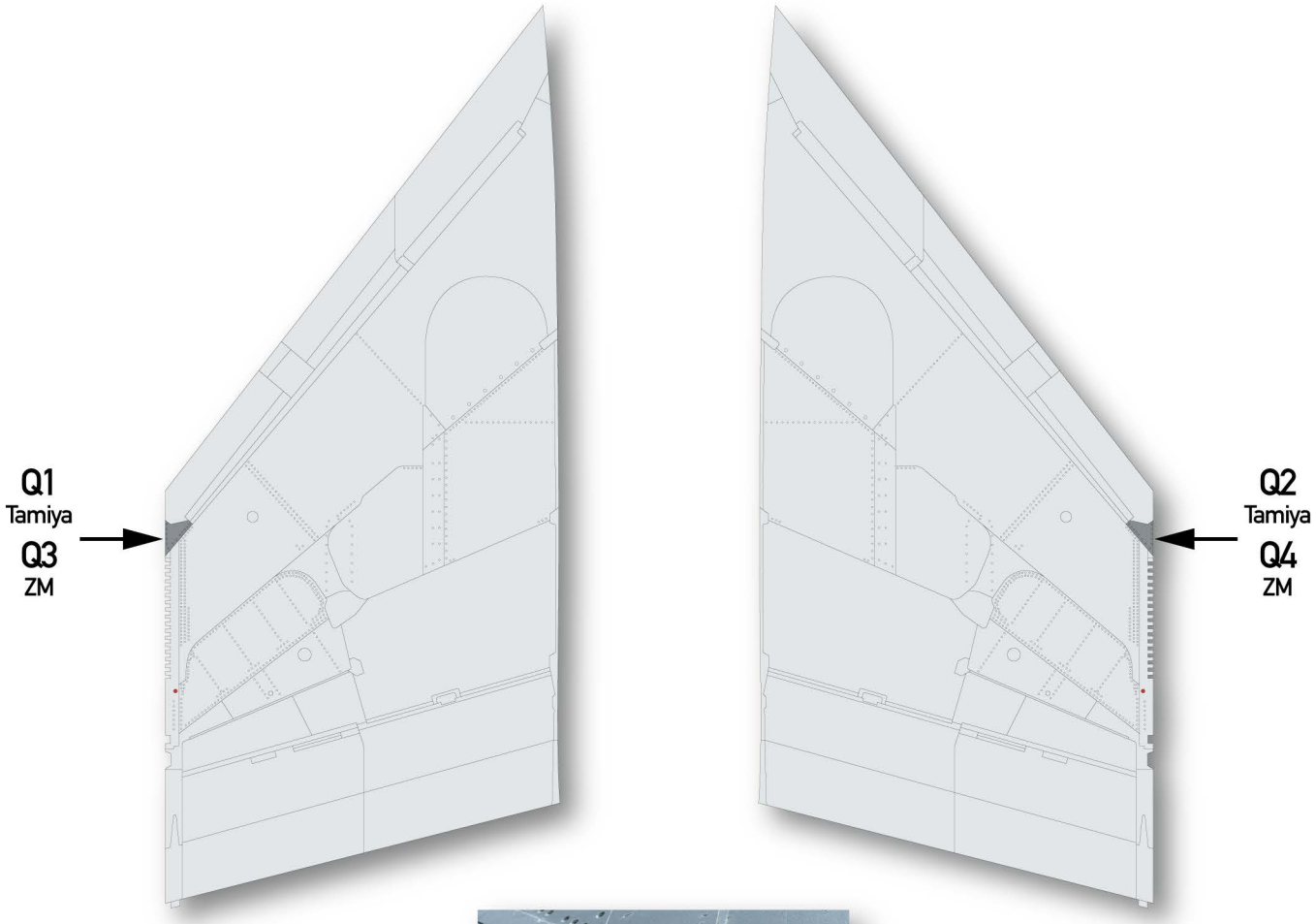
The panel where decal R1 goes was usually painted gloss white on Navy/Marine aircraft. Check photos to see if it is required for your subject aircraft.

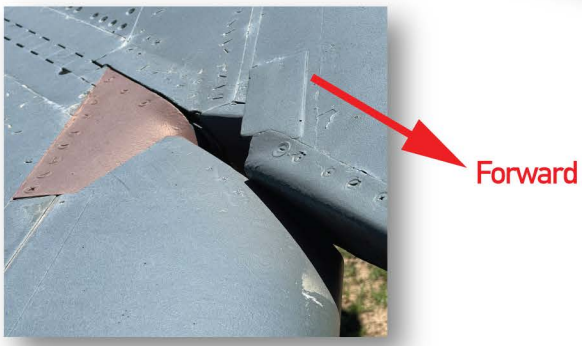
F-4C/Ds and RF-4C/Es have radar altimeter panels under the wing roots, and these are provided from a tracing of the real panel for exact size and shape, which differ in size, shape, and orientation between the fighter and reconnaissance variants due to different systems being fitted..

The panels on the lower nose of the F-4E are quite different from those on the short nosed aircraft, and are asymmetrical, as correctly portrayed by Zoukei-Mura. All of these dielectric panels can be found in a staggering variety of colors, often quite weathered. We have provided three different shades so you can mix and match at will.

McDonnell Douglas F-4 Phantom
Boundary Layer Control Exhaust Panels

On "hard wing" F-4s (which includes the F-4B, C, D, RF-4B/C/E, F-4J, and F-4Es through 71-0236) the leading edge flaps featured Boundary Layer Control (BLC). This routed high pressure air from the engine compressors through ducts along the leading edges to "blow" the flaps and create greater lift, allowing a slower takeoff and landing speed. The BLC air exhausted through these two panels at the outboard end of the leading edge flaps. From the factory these panels were in their natural stainless steel finish, though on depot repaints they were often overpainted. Tamiya again wins hands-down for the shape and detail of this panel. The real thing is curved allowing for the air to escape, and you can actually put your hand into the opening (if you're not afraid of spiders and scorpions). Zoukei-Mura's panel is flat, just like the surrounding upper wing skin.





The left wing BLC exhaust on an RF-4C. This detail is identical on all hard wing F-4 variants (F-4B/C/D/early E/J/RF-4B/C/E).

Photo: fündekals

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McDonnell Douglas F-4 Phantom
Fiberglass Canopy Frames

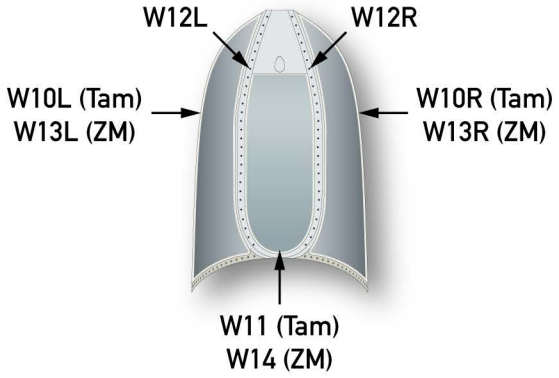
As delivered new from the factory, all F-4 variants had some prominent raw fiberglass finished frames on the canopy (decals W1 through W9). In every case we have seen these frames were left in their natural buff colored fiberglass by the St. Louis paint shop, although on later depot repaints they are often overpainted with camouflage colors.

The decals have been custom fitted to the Tamiya F-4B (and the canopy parts it will share with the F-4C/D and J kits we sincerely hope are coming) and the Zoukei-Mura F-4C/D/E/EJ/J kits. Note the significant differences in the shapes. Proof that no matter how good a kit may look, no model kit is a miniaturized version of the real thing, it is an artistic representation at best.

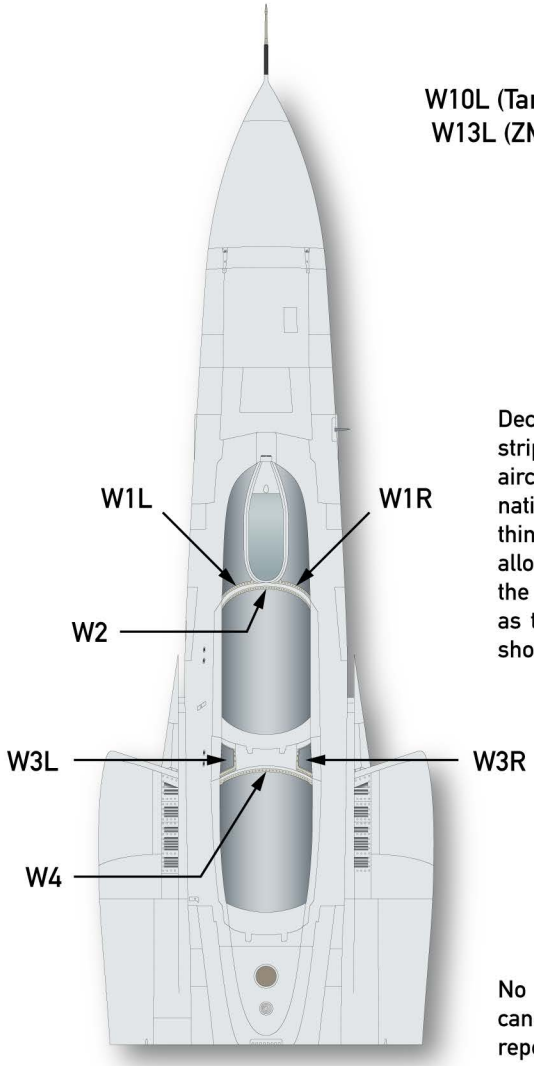
We puzzled over how best to construct these decals. Since the inside of the canopy structure is finished in black to prevent glare for the crew, and since the buff colored decal visible on the outside, by necessity, has a white backing, we elected to provide identically shaped parts in both black and buff. In order to achieve the look required, and given the limitations of silkscreen printing, you will paint your model, masking the clear parts as usual. We recommend painting the canopy frames black first, then apply your camouflage, allowing the black to show through on the inside. The same principle works for these fiberglass frames. Apply the black decals first, allow to dry thoroughly, then apply the buff colored items over the top.

Note that as accurate as it is overall, the Tamiya kit doesn't quite capture the exact shape of the center windows betwen the forward and aft canopies. We have provided parts to fit the Tamiya window exactly (W8L/R), as well as slightly narrower ones that match the real proportions of the window as we measured and traced it (W7L/R). The difference isn't huge, but once you notice it, it's there!

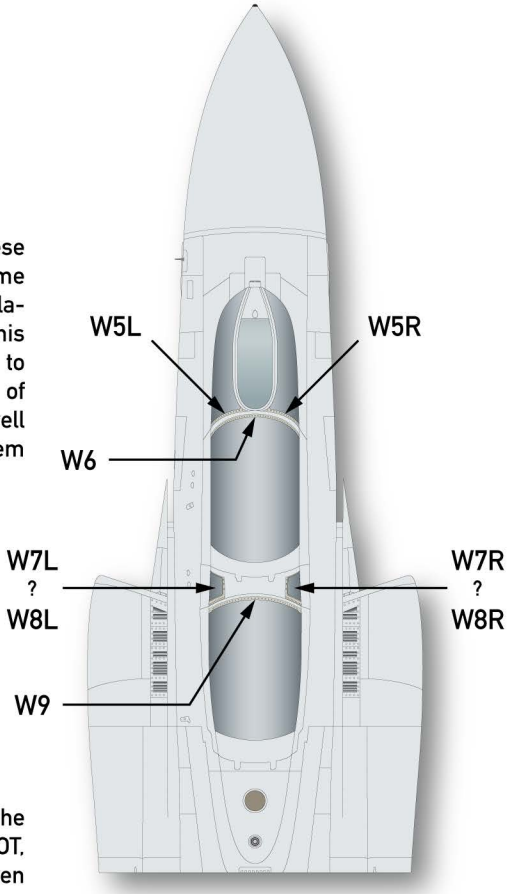
Decals W10 through W14 are the internal fiberglass sealant strips sometimes (but not always) visible. These are on the INSIDE of the canopy on the real aircraft, sandwiched between the frame and the plexiglass, but applying decals that way would be a real challenge... Just reverse the L and R decals if you want to try, and best of luck! We recommend cutting these decals into sections before applying them. There is plenty of extra black and buff colored striping to allow you to do any repairs necessary with any of these colors.



Decals W10-W14 are optional. These strips are much more visible on some aircraft than others (we have no explanation for why). Extra lengths of this thin light grey decal are provided to allow you to apply it along the edges of the moveable canopy sections as well as the center windows between them should you need to do so.



Zoukie-Mura
(all variants)



Tamiya

No matter what you may read, the canopy interior seal strips were NOT, repeat NOT yellow. Not ever, not even once. They were unpainted fiberglass, which could range from almost white to a light buff color. But not yellow!!

McDonnell Douglas F-4 Phantom
Fiberglass Canopy Frames

A collection of photos showing the raw fiberglass framing on the aft windscreen bow, the forward edges of the front and rear canopy, and around the center windows in the bow between the two canopies. Note that on the windscreen the fiberglass does not go all the way to the middle. It ends where the metal frame of the center panel joins. On some of these you can see the additional very narrow fiberglass that runs along the bottom and aft edges of the main canopies.

Right: A late find... A pristine F-4D with the more visible lower and aft edge internal fiberglass seal strips visible. These strips are on the inside of the plexiglass, though that is difficult to discern in most photos. This feature was seen on many, but far from all new F-4s. We do not know why that is the case, so the best we can offer is to look at photos of your subject and build what you see.

Photos: fündekals collection

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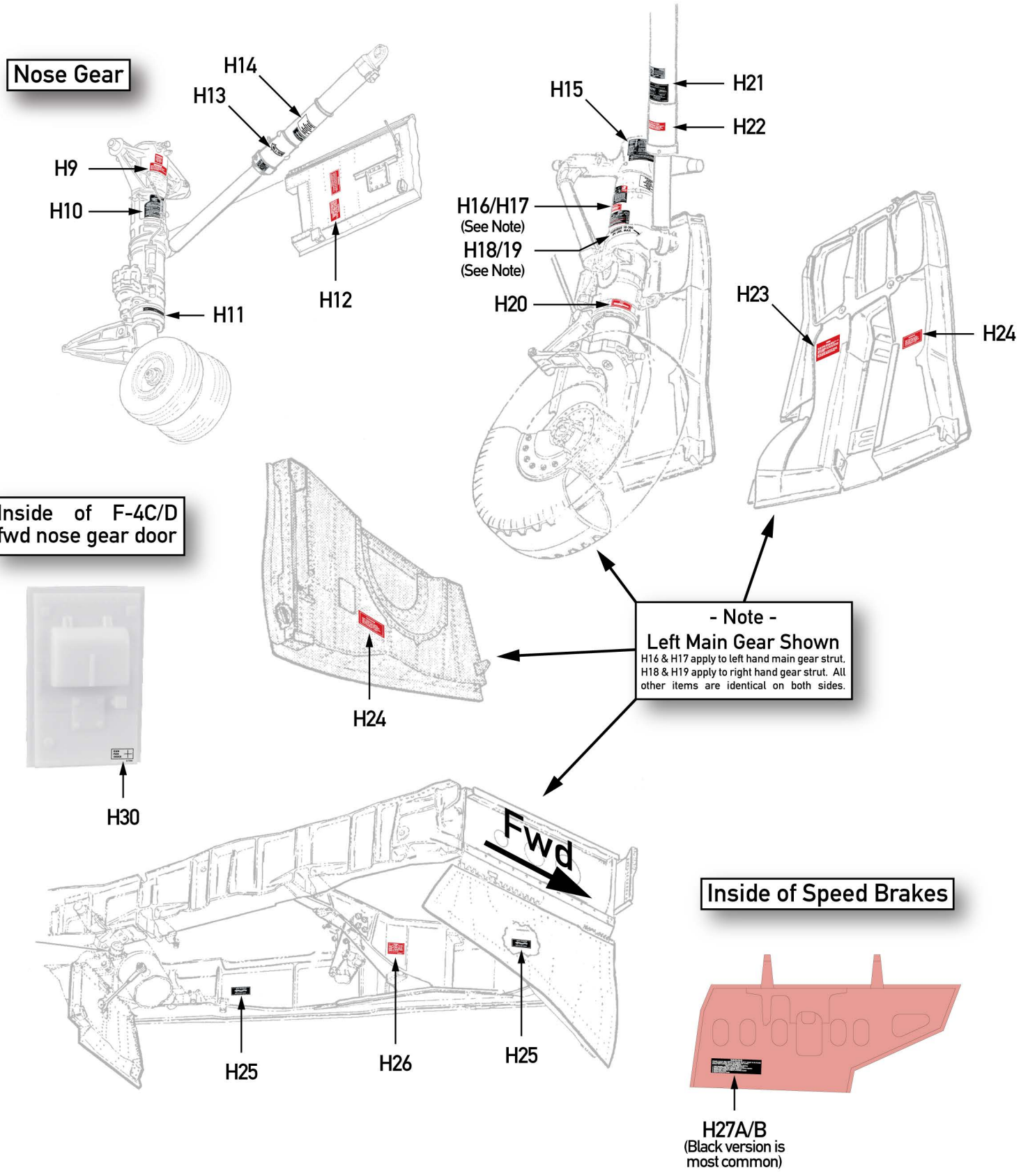
McDonnell Douglas F-4 Phantom
Informational Placards
Gear Struts, Doors, & Bays



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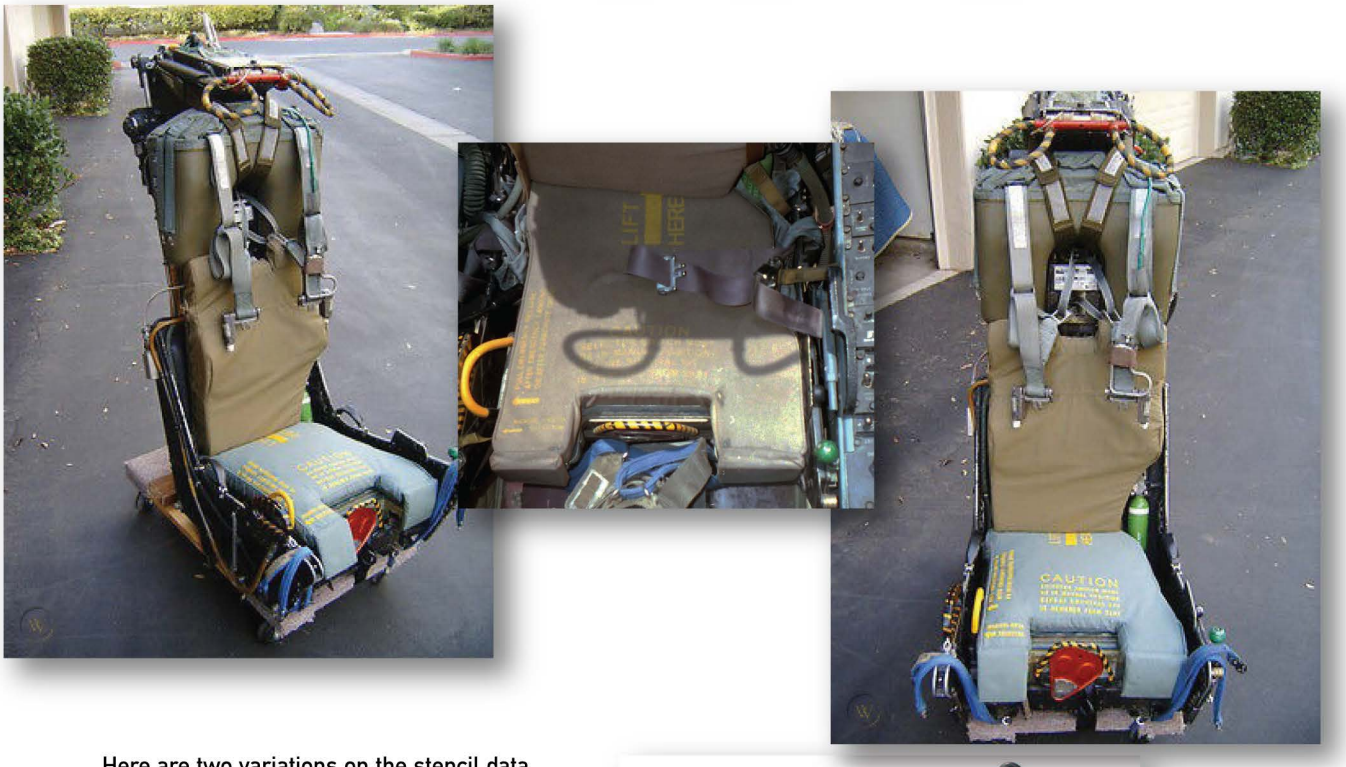
McDonnell Douglas F-4 Phantom

Martin Baker Mk.H5/H7 Ejection Seat Survival Pack Markings



Here are two variations on the stencil data applied to the survival pack/seat cushion on the Martin Baker Mk.H7 seat as fitted to all F-4s after around 1967. The one good photo we have found of the earlier Mk.H5 seat shows very similar markings on the survival pack. These images show an Air Force style seat (above) and a Navy style seat (at right) with different variations of the stencil data, and there were others as well. You can cut the decal to match these or use as-is, as there seems to be very little standardization. Research on ejection seat details is a sorely lacking area in the scale modeling world - a situation that we hope will someday be recitfied by some enterprising researcher/author.

Slime Lights

Flying high speed fighters in formation at night and/or bad weather is an inherently dangerous operation in the best of times. As a way to increase safety while at the same time not giving away the aircraft's position with bright or flashing lights, low intensity formation lighting was developed in the 1960s. This consisted of strips of electroluminescent lights applied to various places on the aircraft to provide cues to the position and distance of the aircraft from an observer. Universally known as "slime lights" because of their pale greenish-yellow color, these formation lights first appeared on production F-4s beginning with the F-4E-45-MC production block, serial number 69-7579. The USAF and most foreign users adopted them, with the notable exceptions of the RAF and Royal Navy, and (oddly) Germany's RF-4Es. The US Navy and Marines only adopted them much later, in the late 1970s, and no F-4B, RF-4B, or F-4J was ever fitted with them at the factory.

The USAF retrofitted its entire fleet of earlier F-4Cs, Ds, and Es and RF-4Cs with these lights during depot maintenance, with the entire fleet being outfitted by 1974. There were significant differences, particularly in the treatment of the lights on the wing tips, between factory fitted and depot upgrades (see following pages).

While this decal only covers McDonnell Douglas factory stencils, we decided to make an exception on the slime lights. Since we had done the research and were printing the required colors anyway, we've decided to provide as many depot style slime lights as we can identify from period photos.

F-4 fuselage and vertical tail slime lights are mounted in a frame that stands proud of the skin of the aircraft by about 1/8" (approximately 3-4 mm), held in place with Philips head screws.

On the wing tip lights on hard wing aircraft, the frame holding the electroluminescent strips was set into the skin panel on the tip, while on almost all depot mods we have found, it completely fills that skin panel (see diagrams), and often appears slightly raised above the wing skin. The design of the wing tip lights changed completely when the slatted wing was introduced on the assembly line starting with F-4E-48-MC 71-0237. It appears there was an early version, found on aircraft at least midway through the FY72 production blocks (see photo next page), and a later version fitted through the end of F-4 production.

On factory installed lights, the mid-fuselage strips in Access Doors 36L and 36R were invariably mounted at a slight nose-down angle. Depot installed lights in this location could be seen the same way, while others appear to be parallel to the lower edge of the panel.

Photos: fündekals collection

McDonnell Douglas F-4 Phantom
Low Intensity Electroluminscent Formation Lights

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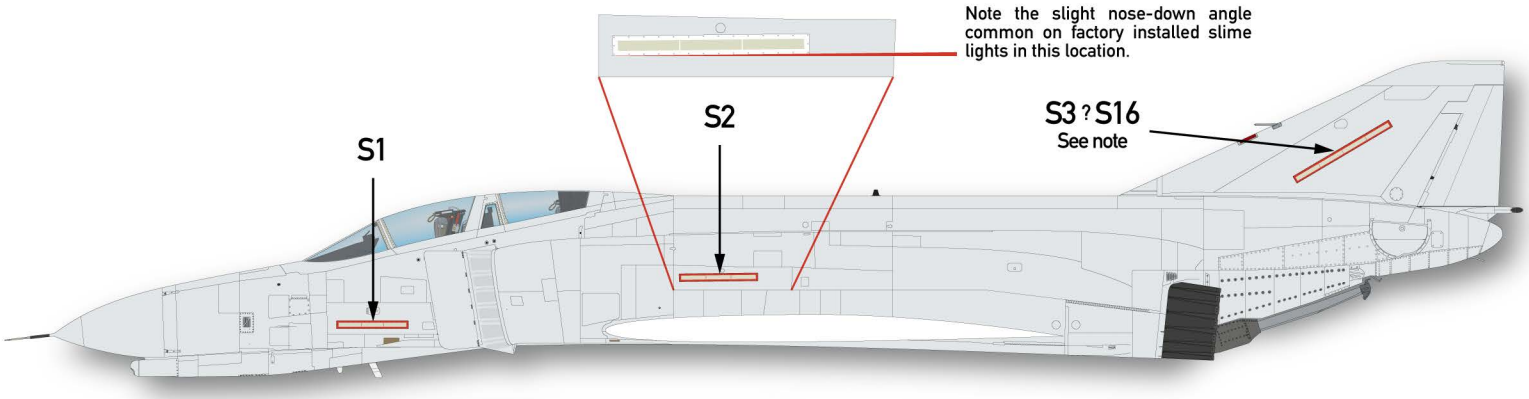

Left: the forward fuselage light on QF-4E-61-MC 74-1625 showing the slight raised frame.

Below: the center fuselage light on the same aircraft. Note the slight nose-down angle common on factory installed slime lights in this location.

Note: Pending further research, it appears that on (at least) F-4Cs and Ds with depot installed slime lights, the four-light strip on the tail was shorter than the factory F-4E type decal (S16). The precise depot installed location and angle on the tail could also vary. Check your references carefully!

Left: the left wing tip light on F-4E-54-MC 72-1484 showing what we believe to be the early configuration of the slatted wing tip light. Note the brownish frame around the light.

Below: an F-4F (identical with later block F-4Es) showing the more common style of lights. This aircraft lacks the black frame seen on many aircraft.

Left: a shot of an IDF hard wing F-4E with the narrow black framing around the light strips. These were often seen mixed with unframed light strips on the tail on the depot installed lights.

Photos: fündekals collection & courtesy Yosi Yaari

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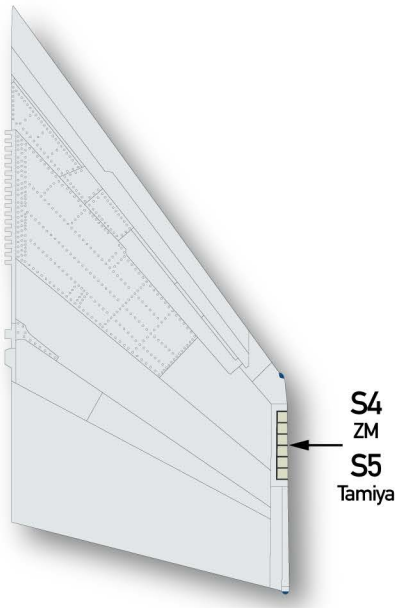
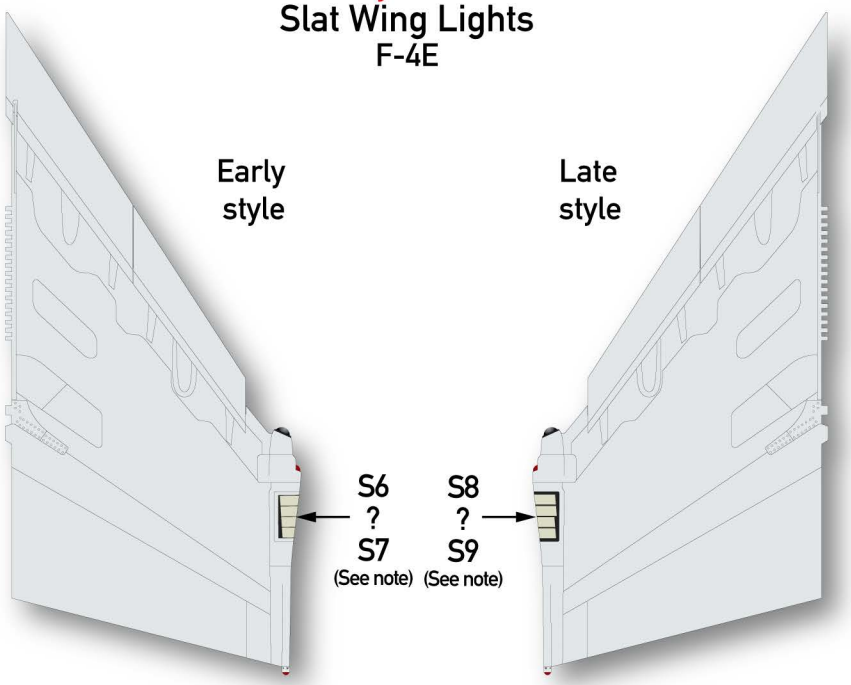
McDonnell Douglas F-4 Phantom
Low Intensity Electroluminscent Formation Lights

Factory Installed
Hard Wing Lights
F-4E/RF-4C/E



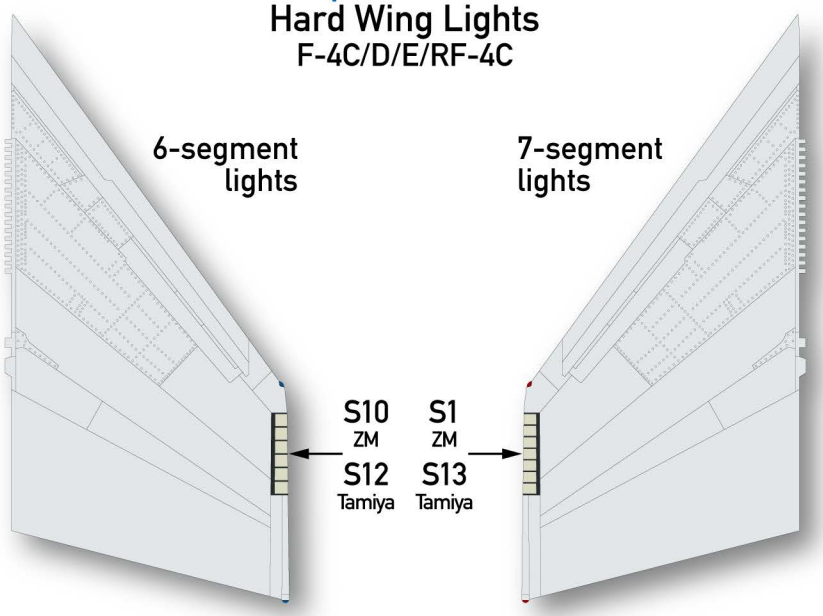
Factory Installed
Slat Wing Lights
F-4E



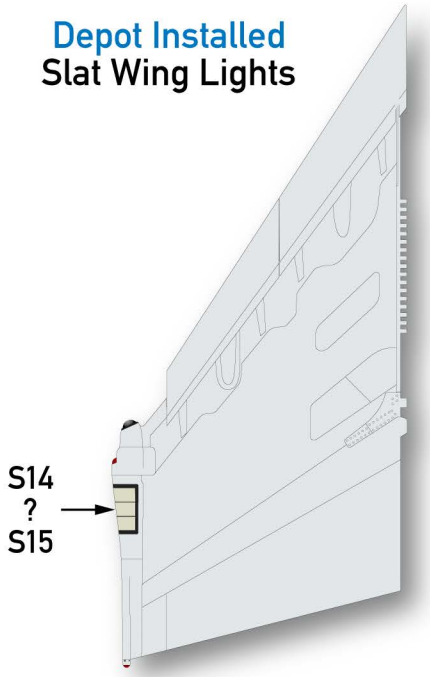
Factory lights ↑ ↑ **Factory lights**

Depot lights ↓ ↓ **Depot lights**

Depot Installed
Hard Wing Lights
F-4C/D/E/RF-4C

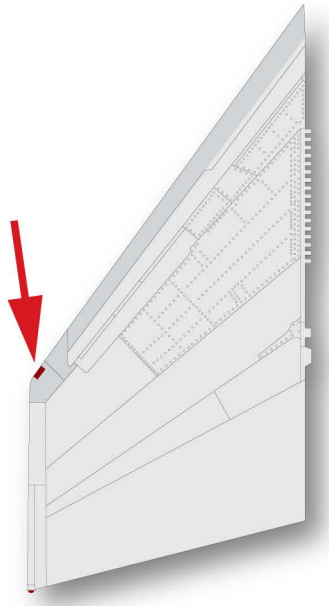


Depot Installed
Slat Wing Lights

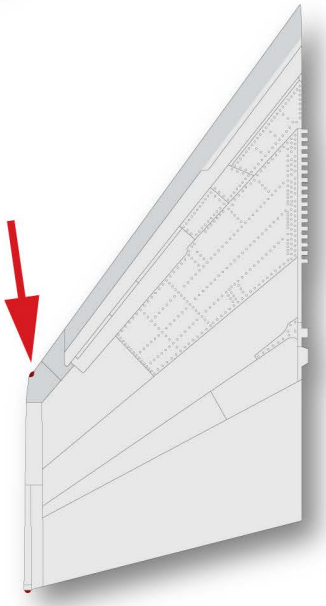


Note: Decals S6/S7 are the initial style of lights fitted to early factory slat-wing aircraft through at least sometime in the FY72 production blocks. Decals S8/S9 are the later style. Check photos of the specific aircraft you are modeling, but if in doubt use the more common later style.

Wing Tip Nav Lights



Phellow Phantomaniac Kim Simmelink (in his terrific Phantom Phacts blog: https://phantomphacts.blogspot.com) notes three distinct styles of Phantom wing tip lights. The first style (not shown here) seems only to have been fitted on the very earliest airframes before the second style (shown at left) appeared. This was found on F4H-1s as well as early F-4Cs. It appears the change to the 'bug eye' style lights took place somewhere during Block 6 production on the F4H-1, but the picture is still very muddy. Since the first actual F-4C was a Block 15 airframe, and we have photos of quite a few early F-4Cs with the original style flush light, we're at a loss to explain how it came down. What we do know is that the 'bug eye' style was pretty rapidly retrofitted, and the older flush style seems to have disappeared, even on test birds, by somewhere around the end of 1964. This feature is often virtually impossible to discern in photos, but we have provided some below to illustrate the original style. For sure the two F-110As (BuNos 149405 and '406) as well as a significant number of actual production F-4Cs had the early style when they rolled out of the factory. More reseach required!



Left: F4H-1 149405 Block 9, alias F-110A is seen shortly after roll out in Jan 62. She has the original flush style nav lights.

Right: F-4C-15-MC 63-7410 showing the flush style lights.

Photos: fündekals collection

Wing Tip Nav Lights

Above: F-4C-15-MC 63-7407 displays the flush style light shortly after roll out in Jul 63.

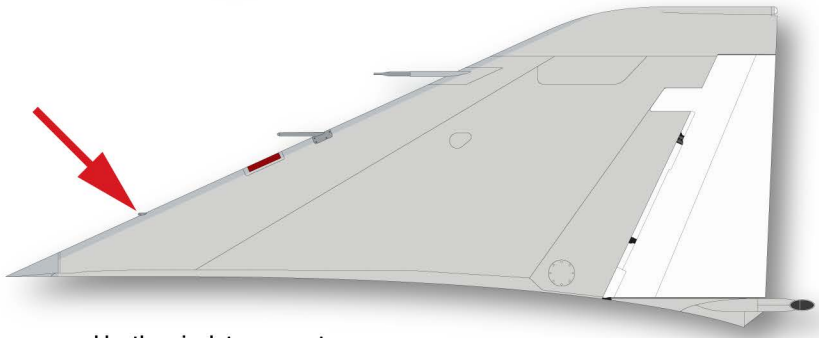
Above: We can't explain how F4H-1 149406 Block 9, here marked as the second F-110A prototype, got the later 'bug eye' lights as quickly as it did, but photos don't lie! This photo dates from the summer of 1962 during weapons compatiblity testing.

Below: F-4C-15-MC 63-7408 photographed during 1965, now with the 'bug eye' style nav lights.

Below: F-4C-15-MC 63-7419, date unknown, also with the later style lights.

Photos: fündekals collection

Total air temperature



In order to accurately display the airspeed and Mach number of a supersonic aircraft, it is fitted with a total air temperature (TAT) probe. High speed ram air is subject to a slight increase in temperature due to its being compressed by the speed of the aircraft. The purpose of the TAT is to sample this air, and bring it to zero relative motion with respect to the aircraft so that the compression heating effect can be eliminated, and the true temperature of the air assessed by the air data computer.
This is then used in calculating and displaying the true airspeed and Mach number in the cockpit.

On the first several hundred production F4H-1s and F-4Cs, the inlet for the TAT was mounted low on the leading edge of the vertical fin. This position was found to be less than ideal, so beginning with Block 16 production, (F-4B 151399 and F-4C 63-7421, delivered in late 1963), the TAT was moved to a small probe mounted just below the port side Environmental Control System inlet behind the radome. This position became standard on all short nose F-4 variants, and was present on all subsequent aircraft in that position. Earlier aircraft had the probe relocated to the nose position. Photos of early F-4Cs with the original TAT probe on the vertical fin are very rare, and it seems the change of location happened very quickly.

On the RF-4 the TAT probe was mounted on the forward nose gear door, and on the F-4E it was mounted to the right of the gun fairing forward of the nose gear door.

F-4C-15-MC 63-7417 which first flew on 27 Sep 63, still with the original style TAT fitted into the fin leading edge.

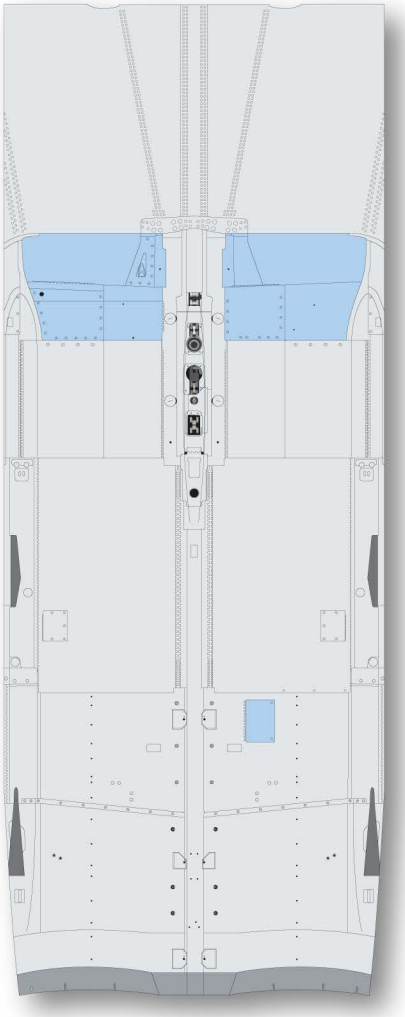
A retired F-4C showing the standard TAT probe position below the port ECS inlet fairing.

Photos: fündekals collection

Engine Bay Access Doors

Another of the (many) things we learned as we dove deeper and deeper into the minutiae of Phantomania on this project was the differences in the panel lines and access doors in Navy vs. Air Force/export Phantoms. Because the two services had differing requirements, some of the ancilliary equipment fitted into the engine bays, as well as the starting system for the engines, differed. This resulted in some fairly signifcant differences in the areas shaded in blue and red below. While it might not be that visible on your model, the differences are there, and will impact how the decals are applied. Tamiya and ZM both got it more or less correct, but other, older F-4 kits often completely miss these detail differences.

F-4B/J/RF-4B



F-4C/D/E/RF-4C/E

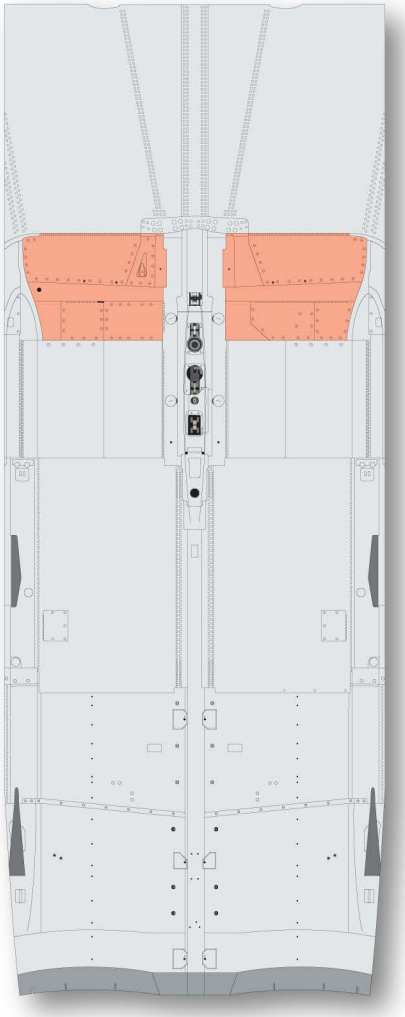
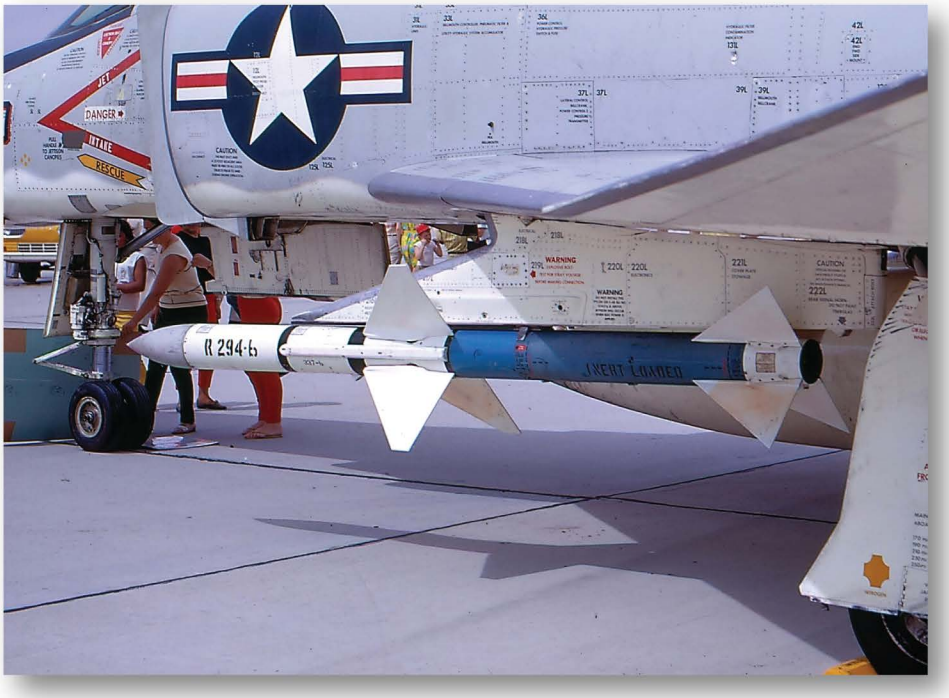


Photo: fündekals

McDonnell Douglas F-4 Phantom
AIM-7 Sparrow Missile
Serial Number Markings



We have provided a selection of serial numbers so prominent on AIM-7 Sparrow missles from the early 1960s to the early 1980s as seen loaded on Phantoms. There are several styles, and a range of serials from very low ones, into the 10,000s, covering most of the period when aircraft with their factory stencil data would have carried them. Above and below are photos showing the positioning of these serials. Check your references for the most appropriate serial range for your subject.

Photos: fündekals collection

The Very, Very Last Page!

(For all the stuff that didn't fit anywhere else)

Some random thoughts on modeling F-4s - in no particular order:

- When looking at details of the early Mk.H5 and later Mk.H7 seats, note that the "H" is important. A Martin Baker Mk.5 is not the same seat as a Mk.H5 at all. Be sure you know what you're looking at.
- Things that droop as soon as the engines are powered down:
  - Ailerons - but not flaps - droop gradually. Only a little when the power is first turned off, then keep dropping for days if the engines aren't powered back on. So any variation in amount of droop is appropriate/realistic based on how long since power was removed.
  - Lower wing speed brakes - same principle as the ailerons.
  - Engine auxiliary intake doors (Doors 81R and 81L): fully open when engines are shut down. They close immediately and violently when power comes on (and will take your hand off it's in the way!)
  - Gun gas purge door (F-4E/F only, decal F62) fully opens immediately when power is removed and closes when power is applied to the aircraft. It opens in-flight when the gun is fired.
  - Drag chute hatch door/tail cone is generally open after landing and parking (assuming aircrew used the drag chute on landing, which was normal ops). It would normally stay open until the crew chief packed a new chute for the next flight.
- Canopies were normally seen either fully open or fully closed. If you see a photo of an F-4 with one or both canopies in a partially open position, it is almost assuredly an "in-action" photograph, where the canopy was actually moving to the full open or full closed position at the exact moment the photographer tripped the shutter. Based on our careful photographic measurements, a typical fully open canopy position is approximately 40-42 degrees from the static ground line, or 52-54 degrees from the canopy sill.

- Wheels/tires: USAF style main gear brake assemblies in the center of the hub were a rusty steel color, often with lots of dark grey/black residue. Navy/Marine aircraft had a different hub/brake assembly. Tires inflated normally had very small flat spots but did not bulge. They were high pressure tires with very strong side walls.
- Weathering the undersides: Phantoms were generally very clean forward of the line defined by the main wing spar. Behind that they were filthy along the panels under the engines (but not the intakes forward of the engine bays) and the wings were lightly to medium dirty around the wheel wells and behind the speed brakes and flight controls (flaps, ailerons and spoilers on top).
- The natural metal area behind the engines on Vietnam through 80s era Phantoms was ***filthy***, with a heavy buildup of black and brown toned thick soot. It was not until the "smokeless" (there's a laugh) engines appeared in the 1980s that this changed. Most scale models don't portray just how dirty Phantoms were in those days, so for it with the soot! For 1990s and later (i.e., modern Greek jets) go nuts with the metallurgy experiments in different burnt titanium colors, after cleaner "smokeless" engines were fielded in the late 80s, but a 60s or 70s jet is DIRTY. The concrete in the last chance pit at Udorn RTAB proves it!

- If you're depicting an F-4 powered up and taxiing out for a strike, then all those ailerons, speed brakes, engine aux doors, and gun gas purge door (on F-4Es) should be up/closed/tight while engines are running. Drooping ailerons and/or speed brakes on a jet in the last chance arming pit is something you just don't see in the real world.
- Other mentionable factoids:
  - Almost never during the Vietnam War, did a USAF F-4 have any combination of bombs, missiles, or rockets on the inboard pylons while also having AIM-9s on that same pylon. Until the Sidewinder launcher spacers (demanded by Robin Olds) became available it was physically impossible to mouth both on the same pylon.
  - The same holds true for the Navy & Marines until roughly Linebacker and Linebacker 2 in 1972.
  - USAF F-4Ds and some early Es did mix one AIM-4 Falcon missile with some combination of bomb/bombs on the inboard pylons, but the Falcon didn't last long in Southeast Asia. Copy your references for these configurations closely (and also provide copies of those photos to the IPMS judging committee if you're entering a model contest).
  - You can find photos of late Navy jets with 2x AIM-9s and a TER full of Mk 82s, but this configuration is unlikely to have happened more than a handful of times during the late stages of the war, and did not happen at all during the early cruises of the Rolling Thunder campaign, as, again, it was physically impossible before the AIM-9 rail spacers.
  - Normal position for the horizontal stabs is with the leading edge a few degrees higher than the trailing edge. This slightly aircraft nose-down position was a standard trim setting for ground ops and parking. Occasionally you'll see a photo with the stabs in a dead neutral (straight/level attitude), and even more rarely you might see the stabs at angled leading edge down, however this is really only seen on powered aircraft about to launch.

The End!!

(See, that wasn't ***so*** bad, was it?)

Photos: fündekals collection

And just because...

they don't come any prettier than this...

Photos: fündekals collection

Thanks to phellow Phantom Phanatics Scott Wilson, Kim Simmelink, Jeffrey Kubiak, Peter Greengrass, Jun Temma, Andreas Klein, Brian Nicklas, Fotios Rouch, Henk Schuitimaker, Don Gilham, Jerry Hughes, George Canciani, Rob Martare, Clint Rowland, Mark Richardson, Henk Schakelaar, Es-haq Khosravi, Behnam Bahrami, Tom Neal, Tommy Thomason, and Yosi Yaari for their incredibly kind and generous assistance on this project...

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SPOOK ON GUYS!